

AFFIDAVIT OF EVELYN SAVARIN

State of New Hampshire]
]
County of Rockingham] ss.

Evelyn Savarin being duly sworn deposes and says:

1. My name is Evelyn Savarin. I reside at 18 Marsh Lane, Hampton, NH 03843
2. I have been plagued with electrosensitivity for over 15 years. I discovered it attending Grad School in Princeton N.J when living very close to major transformers, antennas and using a computer.
3. The symptoms manifest themselves primarily through disturbed sleep rapid heart beat. I found when I left for the countryside my symptoms would dramatically improve.
4. Curious why this was happening to me in certain settings and not others, I began to investigate my surrounding environment and activities. Through intensive research I learned these symptoms were very much related to my exposures from varying types electromagnetic radiation signals.
5. The growth of radio/microwave radiation in our ambient environment has increasingly marginalized my life, both in the type of working environments I can handle and the places I can live that allow me to sleep and focus well. When I find a living situation that works well for me, the continued build out of antennas and personal wireless devices resurrects the severity of my symptoms. I then must find another place to live, or a way to shield my environment.
6. My living options have become so few and very expensive
7. To find places which are lower in ambient EMF-RF radiation, I have had to purchase many sophisticated electromagnetic meters, covering a host of frequencies.
8. I am now living in the basement of a mother in law single family home, far from other neighbors except for my own landlord. I chose this place because I saw that the readings were relatively low. I still had trouble sleeping. It did not take long to discover my landlord, who was sympathetic to my the issue, owned a DECT phone and baby monitors which were on all day and night. He was not aware these device emitted RF radiation until my meters showed him how high the readings were.
9. He proceeded to turn off the baby monitors completely and DECT phone at night. I began to sleep much more rapidly and soundly.
10. Interestingly, his younger child who had rarely, if ever, slept through the night since he was born, began sleeping through the night after all wireless devices were turned off.

EXHIBIT 13

11. It is criminal to allow these personal home wireless devices be sold without any labeling or warning they are emit of radio/microwave radiation, and that possible side effects can occur by this type of radiation.

12. European governments and other governments around the world are becoming more aware of the mounting evidence of health effects from this technology. They are not reassured by naysayers who adamantly deny any element of harm exists from the wireless world we are exposing ourselves and our children.

13. Many European countries are taking many precautionary and proactive measures to reduce exposures to their populations, namely restricting the marketing and sales of cell phones to children, eliminating WIFI in schools and some public institutions, restricting the installation of antennas away from schools and hospitals, and many are in the process or have set much lower standards from any antenna emission. Some communities in Europe have even been given permission to take down antenna sites which they found were too powerful or too close to residential environments.

14. The European parliament is asking for greater disclosure in the sale of wireless devices, so that people will know how much radiation is being emitted from them.

15. It seems inconceivable that this country and its health institution can so readily dismiss any connection between the growing manmade electromagnetic radiation envelope and its health effects.

16. Our medical institutions seem to have no problem harnessing the power of radio/microwave energy to perform all kinds of medical miracles and biological interventions. Yet when it comes to making the connection that those same radio/microwave emission indiscriminately disbursed into the environment can generate a biological response, any admission of health effects is denied.

17. With the endless rollout of wireless applications from antenna installations to personal wireless devices, such as Wifi, WiMax, DECT phones, baby monitors, Broadband over powerlines etc., those of us who cannot tolerate or do not wish to live with this type of environmental assault are left with no voice or options.

18. I ask the Commission to consider the democratic rights for those of us who do not wish to be drawn into this wireless pollution revolution. Allows us the opportunity of choice, which we increasingly have less of everyday. Implement a Broadband plan that will allocate wireless free living zones across the country.

19. I ask the Commission to favor, in all possible circumstances, fiber optics, cable or other wired technology that does not emit an envelope of electromagnetic high frequency radiation in the ambient environment.

20. I understand that the EMR Policy Institute is preparing comment to submit in the current Federal Communications Commission proceeding to develop the policy for providing high-speed internet service throughout the country - FCC 09-31, A National Broadband Plan for Our Future.

21. I the undersigned hereby designate The EMR Policy Institute to speak on my behalf on this FCC proceeding for the purpose of defending our rights to be safe in our own home, in our schools and our workplaces and neighborhoods from the invasion into our home, schools and workplaces of signals that may cause harm to us, because the FCC's current RF exposure guidelines are inadequate in light of the findings of current science.

22. I ask that the FCC to accept this affidavit and the attached exhibits ^{A+B (E.S.)} into evidence for consideration under FCC 09-31, A National Broadband Plan for Our Future, as it is material evidence of the existence of signals to which my family and I are subject, yet without proper standards based on current science.

Sworn to before me

Evelyn Savarin
Evelyn Savarin

This 2nd day of June, 2009

Lisa Stonesifer

LISA STONESIFER, Notary Public
My Commission Expires June 27, 2012



Exhibit A

Countries with 100 to 1000 times lower Exposure Standards for RF/Microwave emissions compared to the United States:

Switzerland, Italy, Russia, China and Salzburg, Austria

<http://www.microwavenews.com/news/backissues/j-f00issue.pdf>

<http://www.microwavenews.com/news/backissues/s-o02issue.pdf>

A sampling of Countries and Public Institutions that have issued warnings or restrictions on Wireless Products especially as it pertains to children:

On 4/20/09 the European Parliament issues a comprehensive resolution to manage the health safety concerns of Wireless products.

<http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+COMPARL+PE-416.575+01+DOC+PDF+V0//EN&language=EN>

Press Release:

http://www.europarl.europa.eu/news/expert/infopress_page/066-53234-091-04-14-911-20090401IPR53233-01-04-2009-2009-false/default_en.htm

Belguim municipality mayor limits Cell Antenna Installations

<http://www.elektrose.net/spip/spip.php?article66>

Belguim Consumer Protection Minister issues a statement to restrict mobile phone marketing to children

<http://www.elektrose.net/spip/spip.php?article62>

Finnish position on Limiting phone use for Children

http://www.stuk.fi/stuk/tiedotteet/en_GB/news_527/

France issues policy to limit Cell phone use by children.

http://www.powerwatch.org.uk/news/20090115_france_ban_mobile_phones.asp

France's Public Library in Paris replaces WiFi with wired Internet because of scientific evidence and health complaints linked to Microwave radiation exposure

<http://www.next-up.org/pdf/FranceNationalLibraryGivesUpWiFi07042008.pdf>

French school in Normandy France removes WiFi

http://74.125.93.132/translate_c?hl=fr&ie=UTF-8&langpair=fr%7Cen&u=http://www.next-up.org/pdf/The_mayor_Herouville_Saint_Clair_Calvados_France_remove_wifi_schools_28_04_2009.pdf&rurl=translate.google.com&usq=ALkJrhgPsbCtT39md507xbobWQ9JBfjSPg

Exhibit A

France bans Cell phones in primary schools and City of Orange removes Antennas on roof of Civic Building

<http://electromagnetichealth.org/electromagnetic-health-blog/france-bans-cell-phones-in-primary-schools/>

German Federal Office of Radiation Protection address limiting Children to Mobile phones (original site -in German except for title)

http://www.bfs.de/en/elektro/papiere/bfs_handy_kind.html

Also:

September 17, 2007; The Independent

"The German government is advising its citizens to avoid using Wi-Fi and cell phones as much as possible, suggesting they use cable connections for computers and landlines instead. Their advice goes even further, and warns people of the dangers of electro-smog from other household electrical products. The German Environment Ministry is recommending that people minimize their exposure to Wi-Fi radiation and is *"actively informing people about possibilities for reducing personal exposure"*.

"The German equivalent of the UK Health Protection Agency, the Federal Office for Radiation Protection, is calling for caution in the use of electrical equipment. A representative of the office, Florian Emrich said Wi-Fi should be avoided *"because people receive exposures from many sources and because it is a new technology and all the research into its health effects has not yet been carried out"*

German Lower House of Parliament issued warnings on WiMax and favors Wireline technology where possible (see underline content)

http://www.emrpolicy.org/news/headlines/deutscher_bundestag.pdf

Toronto Public Health department – mobile phones children limit

HYPERLINK "<http://www.thestar.com/article/459099>"

Exhibit B

1. My name is Alex Gherzi

1a. I live at 18 Marsh Lane, Hampton Falls, NH 03844

2. My tenant neighbor is Evelyn Savarin

3. I have lived at this address for over 2 years.

4. I have had a baby monitor in my youngest child's room since he was born, 2 ½ years ago -prior to purchasing my present house. The listening monitor is below his room.

5. I also have had a DECT phone on at all times.

6. When my new tenant, Evelyn Savarin, moved into the mother in law below our living quarters, she informed us that she had a sensitivity to wireless electromagnetic fields. I was sympathetic to her concerns since we had fought a cell tower from being located on the property next to ours.

7. I did not believe we owned any wireless devices. My only knowledge of wireless was WIFI.

8. Evelyn did some measurements and found the apartment would be suitable for her.

9. She soon found it hard to sleep. Doing some additional measurements she realized that there was still quite a bit wireless activity emanating from my part of the house.

10. She conducted some measurements with her meter inside my section of the house, and found the baby monitor and DECT phone was putting out a lot of electromagnetic RF energy.

11. I was not aware that these devices emitted so much electromagnetic radiation.

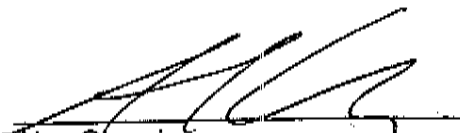
12. I proceeded to turn off the Baby Monitor completely and the DECT phone at night to assist Evelyn in her sleep needs. It apparently helped her a lot.

13. But more important, I found for one of the first times my youngest son was sleeping through the night when all the Wireless devices in our house were turned off. This was 2 months ago and it still continues until today.

14. My children are healthy and normal, however the belief that I may have been compromise their well being and sleep with these devices concerns me greatly.

15. I believe government must do a better job of monitoring and informing the public on the emissions of these home wireless devices, so families can better decide whether the limited safety and convenience is worth the price of children's health and comfort.

Sworn to before me by
LAWRENCE GINSBERG
Notary Public for the State of New Hampshire
My Commission Expires July 28, 2009


Alex Gherzi



This 2 day of June, 2009

Exhibit B

1. My name is Alex Gherzi
 - 1a. I live at 18 Marsh Lane, Hampton Falls, NH 03844
2. My tenant neighbor is Evelyn Savarin
3. I have lived at this address for over 2 years.
4. I have had a baby monitor in my youngest child's room since he was born, 2 ½ years ago -prior to purchasing my present house. The listening monitor is below his room.
5. I also have had a DECT phone on at all times.
6. When my new tenant, Evelyn Savarin, moved into the mother in law below our living quarters, she informed us that she had a sensitivity to wireless electromagnetic fields. I was sympathetic to her concerns since we had fought a cell tower from being located on the property next to ours.
7. I did not believe we owned any wireless devices. My only knowledge of wireless was WIFI.
8. Evelyn did some measurements and found the apartment would be suitable for her.
9. She soon found it hard to sleep. Doing some additional measurements she realized that there was still quite a bit wireless activity emanating from my part of the house.
10. She conducted some measurements with her meter inside my section of the house, and found the baby monitor and DECT phone was putting out a lot of electromagnetic RF energy.
11. I was not aware that these devices emitted so much electromagnetic radiation.
12. I proceeded to turn off the Baby Monitor completely and the DECT phone at night to assist Evelyn in her sleep needs. It apparently helped her a lot.
13. ***But more important, I found for one of the first times my youngest son was sleeping through the night when all the Wireless devices in our house were turned off. This was 2 months ago and it still continues until today.***
14. My children are healthy and normal, however the belief that I may have been compromise their well being and sleep with these devices concerns me greatly.
15. I believe government must do a better job of monitoring and informing the public on the emissions of these home wireless devices, so families can better decide whether the limited safety and convenience is worth the price of children's health and comfort.

Sworn to before me by
LAWRENCE GINSBERG
Notary Public - New Hampshire
My Commission Expires July 28, 2009

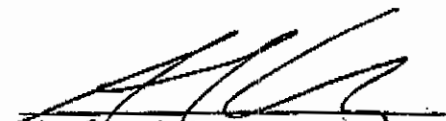

Alex Gherzi

EXHIBIT
13 B

This 2 day of June, 2009

AFFIDAVIT OF RONALD O. HURSTON, M.D.

State of Massachusetts]
] ss
County of Middlesex]

RONALD O. HURSTON, M.D. being duly sworn deposes and says:

1. My name is Ronald O. Hurston, M.D. I live at 29 Shaw Drive, Wayland, Massachusetts.

2. I have lived in Wayland, Massachusetts for 23 years. My home is approximately 3/4ths of a mile from a wireless telecommunications tower which has been in place and operating for about 3 years. I currently live alone in my home. My son, having grown up at this location, is currently away at school most of the time. However, the principles described herein pertain to his situation elsewhere as well.

EXHIBIT 14

3. The operation of this cell tower has been a source of considerable concern to me because, both as a thoughtful adult and as a physician, I have been aware of the body of small studies that have been carried out primarily in Europe on the safety of such microwave transmitters. Unfortunately, as I understand it, for political reasons large scale studies have not been carried out in the United States to address the public health consequences of primarily the nonthermal effects of chronic exposure to low level microwave radiation.

4. The problem is that numerous small studies done in many different locations suggest and even report an association between chronic exposure to such radiation and significant adverse consequences to human health.

5. I feel very strongly that given the suggestiveness of the available research that, without the appropriate large scale studies, it was and remains an imprudent decision to expose the general population including children and seniors to such a risk. It invites potentially tragic public health consequences in the future.

6. I find the decisions to place these towers in close proximity to areas where people spend long periods of time (such as residential, neighborhood, and industrial areas) to be an outrage. The short range financial goals of large corporations have once again taken priority over the well being of the general public, and it will be the general public who will have to bear the personal consequences and foot the financial expenses years later of such irresponsible corporate and public planning.

7. There are schools nearby, and the conservation land that I, among others, contributed money to purchase so that the town rural character could be maintained and its natural beauty enjoyed by all, as far as I am concerned, has been ruined both aesthetically and from a health safety point of view as a result of the placement of the tower in my neighborhood and right next to the conservation land.

8. Because of my concern about the health effects of cell phone technology, I use my cell phone sparingly for essential situations and emergencies. Other than that, I try to avoid its use. The scientific studies that I am referring to were made available to me by the EMR Policy Institute who, I am sure, will make them available to you.

9. It is apparent that the intensity of these wireless transmissions will increase over time as more telecommunications companies locate equipment on the tower. The additional presence of wireless transmission for internet purposes will further increase the population's exposure. Again, let me say that I am not categorically opposed to the presence of obviously necessary transmission facilities near heavily populated areas. I am opposed to their presence when the responsible large scale public health safety studies have not been carried out so that reasonable safety standards can be established.

10. Without scientifically validated, updated, thoughtful, and responsible FCC standards for the location of sources of microwave radiation in the community and the enforcement of such standards, I have significant concerns about the risk to my health and the health of my family and the health of others over time.

11. I understand that the EMR Policy Institute is preparing comment to submit in the current FCC proceeding to develop the policy for providing high-speed internet service throughout the country- FCC 09-31, A National Broadband Plan for Our Future.

12. I hereby designate The EMR Policy Institute to speak on my behalf on this FCC proceeding for the purpose of defending my rights to be safe from significant adverse nonthermal health effects from microradiation telecommunication and high speed wireless internet signals in my own home and for my family members to be safe in our neighborhoods, in their schools and workplaces.

13. I ask that the FCC accept this affidavit as evidence for consideration under FCC 09-31, A National Broadband Plan for Our Future, as it is material evidence of the existence of signals to which I and my family are subjected without proper standards based on current scientific principles.


Ronald O. Hurston

Sworn before me

This 6th day of June, 2009


Notary Public

Sutha Karikal
Notary Public
My Commission Expires
April 9, 2010

AFFIDAVIT OF MARGARET PATTON

State of Massachusetts]

ss.

County of Middlesex]

MARGARET PATTON, being duly sworn, deposes and says:

1. My name is Margaret Patton. I live at 43 Plain Road, Wayland, Massachusetts.
2. I have lived in Wayland, Massachusetts for 37 years. I live 1.4 miles from 193 Old Connecticut Path East, the home of a 180 ft. cell tower with the antennas of four carriers (AT&T, Sprint, T-Mobile, and Verizon) operational about three years. I live about 0.4 mile from Nextel antennas on top an electric utility pole on the railroad line behind 300 Boston Post Road that has been operational about five years.
3. Henry Lai's 1995 research^{wes} compelling in which he reported DNA stand breaks from microwave RFR at low intensity levels (the published results were in the International Journal of Radiation Biology (1996;69-4:513-521) and Bioelectromagnetics (1995; 16:-207-210).
4. The Salford et al. 1997 study of the change in the blood-brain-barrier at a specific absorption rate (SAR) of 0.0004 W/kg is more evidence showing harm. [Presented at the Second World Congress on Biology and Medicine of Electricity and Magnetism in Bologona, Italy, 1997].
5. *The Bioinitiative Report* (www.bioinitiative.org/), about the dangers of digital microwave technology to humans, notes that microwave cellular antennas and towers should not be in residentially zoned neighborhoods.
6. For the last ten years, wireless companies (AT&T, Nextel, Sprint, T-Mobil, Omnipoint, Cellular One, and MetroPCS) come into Wayland and demand sitings where they want, by intimidating local authorities with lawsuits and harassing the citizens who tried to protect their families and homes from the intrusion of cellular antennas and towers in residentially zoned areas.
7. Wayland 1998 Special Town Meeting overwhelmingly passed a six-month to one year wireless moratorium. It was denied by the Massachusetts Attorney General (AG). We citizens and the Town of Wayland both filed suit against the AG. (See *Wayland v. Attorney General*, Middlesex Superior Court, No. MICV 1998-05297).
8. In 1998, Nextel Communications, Inc. and Cellular One Communications, Inc. applied and were granted by the Wayland Planning Board an Approval Not Required endorsement. They wanted to put antennas on Boston Edison Company (BECO) Tower #112 in Wayland Center. (See *Margaret T. Patton, et al. v. Planning Board of The Town of Wayland*, AT&T Wireless PCS, Inc., Omnipoint Communications Inc., Omnipoint Communications MB Operations, LLC, Massachusetts Bay Transportation Authority, and Boston Edison Company.)

EXHIBIT 15

9. In the above mentioned case, AT&T asked Massachusetts Superior Court for monetary sanctions against me and others. While Judge Hiller Zobel would not allow the monetary sanctions, he announced that he had stock in a cellular company. We lost the suit on a standing issue, not on the merits of the case.

10. December 1998 Special Town Meeting voted in Moratorium #2, later approved by the AG. As the first Moratorium was ruled invalid, it left the town wide open for the wireless companies to apply for permits.

11. Wayland 1999 Town Meeting overwhelmingly passed a bylaw establishing a wireless overlay district for cellular antennas and 900 ft. setbacks from the property lines of schools, nursing homes, and dwellings. To this date, no antennas are in that district. The companies knew they could always go there, but pushed their way into the residential neighborhoods instead.

12. In 2002, the Massachusetts Appeals Court determined that the plaintiffs whose property abutted the BECO Tower #112 did not have standing in the case against the Planning Board (see Item #8 above). The abutters prevailed on the grounds in a different forum. Had the Town and citizens prevailed, BECO Tower #111 would not have Nextel cellular antennas on it today. Plaintiff Michelle M. Purrington and her three children live approximately .02 mile from these cellular antennas.

13. Today a 180 ft. tower with four carriers' antennas sits in a residential neighborhood surrounded by houses at the top of Reeves Hill at 139 Old Connecticut Path East Road. The companies are always allowed to construct their towers and antennas before the court makes a decision. It took three and a half years for the Massachusetts Land Court to make a decision on Reeves Hill. We are appealing that decision. So each time, it takes the courts years to decide the cases while the wireless companies build their towers, antennas and put them on-line radiating the neighborhoods and make profits. Since the installation of the Reeves Hill antennas, I have had many sleepless nights. As a survivor of cancer twice, I am very concerned about the close proximity of the cell antennas as well as the number of antennas allowed on this one cell tower. The carriers are unable to demonstrate that the radio frequencies they produce is safe for human health and hide behind woefully inadequate and obsolete FCC "safety" standards as their warrant for inflicting uninvited harm in residential areas. Right now a fifth carrier (Metro PCS) is building antennas on the tower regardless of a lawsuit in Concord District Court by neighbors and concerned citizens.

14. In one case in the U.S. Court of Appeals for the First Circuit, our lawyer was informed that it was difficult to find a judge who did not have a conflict as many of them have stock in the wireless companies. Massachusetts Superior Court Judge Zobel was not the only judge who informed the litigants that he had stock in wireless companies. US District Court Judge Mark L. Wolf continued to preside in the 2005 case of Cingular Wireless PCS against the Town of Wayland (See Exhibits 1 and 2). Neither party nor the judge included the abutters to 137 Boston Post Road to be involved in the case (See Exhibit 3). In June 2005, citizens who lived next door to a proposed 120 ft. cellular tower at 137 Boston Post Road petitioned the United States District Court for the District of Massachusetts (CIVIL ACTION NO.2004-cv-11807-MLW) but were not allowed to be joined in Cingular and Eastern Towers' action against the Town of Wayland.

Once again, the courts give the wireless companies what they wanted and ignored the rights of the citizens.

15. While AT&T and Omnipoint were allowed by the court to join in the ANR suit (see #8), abutters to BECO Tower #111 were not joined in the suit by either party or the judge, and were not even allowed to intervene in February 2002 in the Nextel case against the Zoning Board of Appeals (CIVIL ACTION NO. 02-10260-REK.)

16. The Wayland Board of Health has continually recommended disapproval of all wireless antennas and towers in residentially zoned areas. (See Exhibits 4, 5, and 6.)

17. Not only do the courts ignore the citizens, the town sees money on publicly owned lands in rentals fees to wireless companies. The town also does not want expensive legal bills, so does nothing to stop the wireless invasion. Instead, the citizens of the town file suits against the wireless companies to protect their residentially zoned properties from the siting of cellular antennas and towers. Often town officials become hostile to the efforts of the citizens. (See Exhibit 7). Mr. Robinson never received a postcard letting him know about the building permit.


18. The insufficient FCC safety standards expose all of us to amounts of radiation that many studies show are harmful to human health. Massachusetts Radiation Control no longer keeps records of locations of microwave antennas. The amount of radiation coming from antennas is information not available to the public.

19. As the wireless build-out increases daily, none of us are safe in our own homes. We effectively have no rights as home owners to protect ourselves from invasive pulse-digital microwave radiation from close-by microwave antennas. The federal court judges know very little about state zoning matters and their rulings usually are on the side of the wireless companies as abutters are said not to have standing or are not allowed to be joined or to intervene in cases brought by carriers against the town or its boards. We have no rights and the companies get whatever they want. Do they own the FCC too?

20. In 1999, I was in the court room in New York City and heard at least two of the three United States Court of Appeals for the Second Circuit judges ask the FCC lawyers if they had looked at any biological research before the FCC released the wireless licenses. The answer was "No Sir" each time.

21. I ask that the FCC accept this affidavit into evidence for consideration under FCC 09-31, A National Broadband Plan for Our Future, as it is material evidence of the existence of signals to which my family and I are subject, yet without proper safety standards based on current international science.

22. I request that EMR Policy Institute represent my interests before the FCC and other bodies considering these issues.


Margaret Patton

Sworn to before me

UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

NEW CINGULAR WIRELESS PCS,)	
PPC, ET AL.,)	
Plaintiff,)	
)	
v.)	C.A. No. 04-11807-MLW
)	
TOWN OF WAYLAND, ET AL.,)	
Defendant.)	

ORDER

WOLF, D.J.

February 28, 2005

In response to the January 27, 2005 Order, both parties have made submissions stating that they do not believe that my recusal is required by 28 U.S.C. §455(a) or §455(b) and, in any event they waive, pursuant to 18 U.S.C. §455(e), any §455(a) ground for disqualification. I agree with the parties' assessment and accept their waivers. Therefore, I will continue to preside in this case.

/S/ MARK L. WOLF
UNITED STATES DISTRICT COURT

UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

FILED
IN CLERKS OFFICE

C.A. NO. 04-11807-MEE
JUL 11 P 1:44

U.S. DISTRICT COURT
DISTRICT OF MASS.

AT&T WIRELESS SERVICES OF
MASSACHUSETTS, INC., d/b/a AT&T WIRELESS,
and EASTERN TOWERS, LLC,

Plaintiffs

v.

TOWN OF WAYLAND, MASSACHUSETTS,
BOARD OF APPEALS OF THE TOWN OF
WAYLAND and JAMES E. GRUMBACH, ERIC B.
GOLDBERG, STEVEN FUGARAZZO, LAWRENCE
K. GLICK, SUSAN KOFFMAN, SHAUNT SORIAN,
ADIA GENNIS, LINDA SEGAL, as they are members
and alternate members of the Board,

Defendants

DEFENDANTS' REPORT
REGARDING RECUSAL


Defendants, in accordance with the Order of the Court dated January 27, 2005, hereby report that they do not believe that recusal is required under 28 U.S.C. §455(a) or §455(b). In any event, under 28 U.S.C. §455(e), to the extent that there may be ground for disqualification under §455(a), based upon the Court's disclosure, the Defendants waive any ground for disqualification.

DEFENDANTS,

CERTIFICATE OF SERVICE

I hereby certify that a true copy of the
above document was served upon the
attorney of record for each other party
by mail-hand on July 10 2005

242685/WAYL/0083


Joel B. Bard (BBO #029140)
Patricia A. Cantor (BBO# 072380)
Kopelman and Paige, P.C.
31 St. James Avenue
Boston, MA 02116
(617) 556-0007

September 30, 2003

Mr. James E Grumbach,
Chairman
Wayland Zoning Board of Appeals
41 Cochituate Road
Wayland, Ma.
01778

Dear Mr. Grumbach;

We understand that on October 21 you will be holding hearings concerning cellular tower applications at 135 and 137 Boston Post Road. As an abutter to both these properties this issue is of particular interest to us.

We strongly object to the granting of these variances for the following reasons.

1) Every town has a host of zoning bylaws that cover everything from lot size to land use to placing a number on the exterior of the building. Wayland is no different. I believe that both the properties in question are in a residential district. One is already operating a business under a variance.

Placing industrial equipment in a residential district is so far outside the letter and intent of the Wayland zoning bylaws that we cannot imagine why these applications are even given a hearing. Wayland has a district for just such equipment and that is where it belongs.

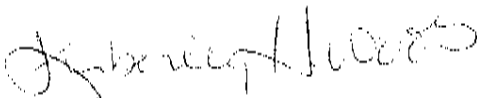
2) Most activities that a neighbor undertakes has little or no effect on the property value of his neighbors. In this case however, there is no doubt that placing one or both of these towers in these locations will devastate our property value as well as others in this immediate area.

3) Finally and most importantly, we have three young children. As one who was born and raised in Wayland it has been our intent since we moved here in 1995 to raise our children in Wayland as well.

We have grave concerns regarding the health risks to our children as well as ourselves that these machines pose. We understand that the cellular industry can present countless studies showing no risk at all from these installations. I would argue that the long term health risks are not known for the simple reason that these devices have not been in use for such a long time. I would remind you that history is littered by industry sponsored studies that have proven to be less than accurate over time.

We are not asking any special treatment by your committee. All we ask is that you protect the citizens of this town from outside industries by enforcing the existing zoning bylaws as they are written.

Thank you for your time and consideration.



Kimberly H. Woods
9 Pinebrook Road
Wayland, Ma.
01778



Stewart J. Smith

PETITION

1. At the 1998 Annual Town Meeting, the Board of Health (BOH) Chairman Andrew Wheelock reported that the BOH voted unanimously to recommend disapproval of the Board of Selectmen's (BOS) Article #33, to site cellular towers on Reeves Hill.
2. Wheelock also reported that the BOH recommended disapproval of the BOS Article #52, to site wireless antennas in church steeples and in town building copulas.
3. On January 5, 1999, the BOH sent a memo to the Planning Board noting that at its December 15, 1998 meeting, the BOH voted unanimously (4-0) to recommend disapproval of Omnipoint and AT&T's application to site antennas on Boston Edison Company (BECO) Tower #112. "The magnitude of the health hazards from wireless communication facilities has not been determined, and potential health hazards may exist. The authority for our position is granted to the BOH under Mass. General Laws, Chapter 111, Sections 31, 122, 143 and other sections."
4. On February 2, 1999 and on February 15, 1999, the BOH held two public hearings on the health effects of wireless facilities.
5. On January 14, 2002, the BOH sent a memo to the Zoning Board of Appeals (ZBA) recommending denial of an application to site antennas on BECO Tower #111, noting: "This plan indicates that approximately 36 properties and 27 buildings on those properties would be included in this 900 ft. radius. . ." "Cell Towers are considered to pose a possible health risk from radio waves to people who either live or work on properties located in the 900-ft. radius around the proposed cellular tower." Based on the information and research provided (at the 1999 public hearings) the BOH recommended denial of the Tower #111 location.
6. On October 30, 2003, the Board of Health sent a memo to the ZBA stating that the BOH opposed the application (of AT&T Wireless, Sprint and Eastern Towers to site a 120 ft. tower with antennas at 137 Boston Post Road) because the tower would be too close to residences (see ZBA Decision 03-35, Page 11 of 17).

We, the undersigned medical professionals, petition the Wayland Board of Health to continue to protect the public health by recommending against Nov. 1 Special Town Meeting Articles #2 and #3, to site a 180 ft. tower on Reeves Hill. The tower, with pulse-modulated microwave antennas on 24 hours a day, 7 days a week, would be too close to nearby homes, thus possibly endangering the public health and safety of the residents.

Name	Address
Ronald Offenberg MD	29 Shaw Drive Wayland, MA
K.C. Potts, MD	11 Shaw Dr, Wayland, MA
James W. Spillane, MD	8 Fox Meadow Lane
Robert Kott MD	32 Shaw Dr Wayland, MA
Shirley Schaefer, Ph.D.	32 Shaw Dr Wayland, MA



Exhibit 5

BOARD OF HEALTH
41 COCHITUATE ROAD
WAYLAND, MA 01778
(508) 358-3617
FAX: (508) 358-3606

TOWN OF WAYLAND
BOARD OF HEALTH

LANDFILL & RECYCLING CENTER
484 BOSTON POST ROAD
WAYLAND, MA 01778
(508) 358-7910
FAX: (508) 358-7910

MEMORANDUM

TO: Planning Board

FROM: Board of Health *S.C.*

DATE: January 5, 1999

SUBJECT: REPORT ON THE OMNIPOINT/AT&T/BECO (MBTA
Right-of-Way Pole #112) SITE PLAN APPLICATION

The Board of Health at our regularly scheduled meeting on December 15, 1998 voted unanimously (4-0) to recommend disapproval of the Omnipoint/AT&T/BECO (MBTA Right-of Way Pole#112) for Site Plan Review and Approval by the Planning Board. The magnitude of the health hazards from wireless communication facilities has not been determined and potential health hazards may exist. The authority for our position is granted to the Board of Health under Massachusetts General Laws Chapter 111, Sections 31, 122, 143 and other sections.

pole#112comment





Exhibit 6

BOARD OF HEALTH
41 COCHITUATE ROAD
WAYLAND, MA 01778
(508) 358-3617
FAX: (508) 358-3606

TOWN OF WAYLAND
BOARD OF HEALTH

LANDFILL & RECYCLING CENTER
484 BOSTON POST ROAD
WAYLAND, MA 01778
(508) 358-7910
FAX: (508) 358-7910

February 24, 1999

TO: Wayland Planning Board
FROM: Wayland Board of Health *S.C.*
SUBJECT: Article for Special Town Meeting - Article 15 Wireless Communications Services District

At its regularly scheduled meeting on February 23, 1999, the Board of Health discussed the two panel presentations that were sponsored by both Boards, especially the information presented by the speakers at the second forum that emphasized possible adverse effects on biological organisms from non-ionizing radiation. Dr. Henry Lai focused upon three areas that were of concern:

1. The possibility of small hot (thermal) spots being formed that could cause cell damage,
2. The poor performance of rats response to a food location test after being subjected to non-ionizing radiation, and
3. Studies that have been replicated that document DNA damage.

The Board also was concerned about the strength of the radiation and based upon the presentations, it appears that the amount of radiation drops the further you get from the source.

Therefore, based upon their review of the Article, the Board voted to urge the Planning Board to adopt a minimum distance for cellular towers of 900 feet as the distance to residences and/or businesses. Also, they urge you to adopt a position that would prohibit the use of roof-mounted antennas and parabolic dish antennas in order to minimize exposure to the public.

cell towers(wireless communication by-law)2-24-99



Exhibit 7

July 10, 2003

Mr. Daniel Bennett
Wayland Building Commissioner
Wayland Town Building
41 Cochituate Road
Wayland, Massachusetts 01778

Dear Mr. Bennett:

Please mail the enclosed postcard if and when Nextel files an application for a building permit for BECO Tower #111. The postcard is addressed to me at 9 Wheelock Road, Wayland, Massachusetts 01778. Thank you very much.

Sincerely,

Stanley Robinson

AFFIDAVIT OF JUDITH H. IDE


Commonwealth of Massachusetts)
) ss.
Middlesex County)

Judith H. Ide being duly sworn deposes and says:

1. My name is Judith H. Ide. I live at 135 Old Connecticut Path, Wayland, Middlesex County, Massachusetts.
2. I have lived at the above address since 1958, when I was a youngster, before any cell tower was erected.
3. I live 300 feet from a cell tower presently that was erected in 2006 and is operated by Verizon, AT&T, T-Mobile and Sprint.
4. I have read studies that inform us that this technology is dangerous.
5. Because of the number of cell service carriers operating in this area, many signals overlap and I am concerned that there are insufficient safety regulations to manage the exposure to radiofrequency radiation emanating from these signals.
6. As a result, I am concerned about health effects of long-term continuous exposure to one or many signals.
7. Without strong Federal Communications Commission ("FCC") standards and the enforcement of such standards, I am afraid of hazards to my health of low level radiation.
8. I am concerned about having to live next to antennas and transmitters if wireless internet is built in our local environment. I have a right to be safe in my home and I have a right to strong safety standards based on current science.
9. I have been informed that the EMR Policy Institute is preparing comment to submit in the current FCC proceeding to develop the policy for providing high-speed internet service throughout the country - FCC 09-31, A National Broadband Plan for Our Future.
10. I, the undersigned, hereby designate The EMR Policy Institute to speak on my behalf on this FCC proceeding for the purpose of defending my rights to be safe in my home, from the invasion of signals that may cause harm to me, because the FCC's current RF exposure guidelines are inadequate in light of the findings of current science.


EXHIBIT 16

11. I ask that the FCC accept this affidavit into evidence for consideration under FCC 09-31, A National Broadband Plan for Our Future, as it is material evidence of the existence of signals to which I am subject, yet without proper standards based on current science.


Judith H. Ide

Commonwealth of Massachusetts)
County of Middlesex) ss

On this 5th day of June, 2009, before me, the undersigned notary public, personally appeared Judith H. Ide, proved to me through satisfactory evidence of identification, which was MA Dr. Lic to be the person whose name is signed on the attached document, and acknowledged to me that she signed it voluntarily for its stated purpose.


Notary Public
My Commission Expires: 1-19-2012

AFFIDAVIT OF LINDA LETTIERI

State of New York]
] ss.
County of Dutchess]

LINDA LETTIERI being duly sworn deposes and says:

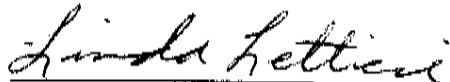
1. My name is Linda Lettieri. I live at 95 Riverview Drive, Fishkill, New York.
2. I worked at Sunburst Communications, Inc. then located at 101 Castleton Street in Pleasantville, New York from June of 1986 until June of 2001.
3. I resigned from my position of Computer Programmer Analyst after 15 years with Sunburst Communications, Inc. because a cell tower was scheduled for construction on a lot directly across the street from our location. Representatives of the Pleasantville Town Board explained that there was no legal action they could take in order to block the construction of this tower.
4. In March of 1995 I was diagnosed with Kidney Cancer. My left kidney and a surrounding tumor were removed. The tumor was "encapsulated" and my prognosis for a full recovery was excellent after the surgery. However, periodic CAT scans were deemed necessary to ensure that no further growth would be discovered.
5. By the year of 2001 when I heard about the cell tower construction in Pleasantville, my body had withstood many CAT scans and consequently a good deal more radiation than the average person. I could not imagine that ANY studies regarding the safety of Radio Frequency radiation would apply to someone like me who had already been exposed to periodic radiation on a regular basis. Therefore, I saw no recourse except to resign from my position in Pleasantville.
6. Because of my past history, I limit my cell phone use, turning my cell phone on only if I am expecting a call or need to make a call. In our home, we turn off wireless connections except when they are in use.
7. It is my belief that we, as a society, have not done nearly enough relevant health studies to warrant the widespread construction of wireless networks.
8. It would greatly upset me if such a network brought any increase in Radio Frequency exposure to my home! It was difficult enough to leave a job after 15 years with the same company. It would be unbearable to feel that I was forced from my own home, yet, to my knowledge, there are NO studies involving a significant population with my level of

EXHIBIT 17

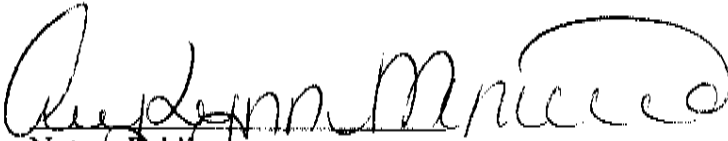
radiation exposure that assure a greater RF exposure would be perfectly safe for my health.

9. I truly hope that we, as a nation, will stop increasing the scope of wireless networks until conclusive studies can vouch for their safety among the many different members of our population, including (but certainly not limited to) those of us with a greater than average exposure to radiation and developing children and adolescents who may be much more sensitive to radiation effects.

Sworn to before me


Linda Lettieri

This 2 day of June, 2009


Notary Public

AMY LYNN MINUTOLO
Notary Public, State of New York
No. 01MI6134367
Qualified in Orange County
Commission Expires October 3, 2009

AFFIDAVIT OF BEVERLY PAPE

State of Texas]
]
County of Dallas]

ss.

June 1, 2009
#09-31

BEVERLY PAPE being duly sworn deposes and says:

1. My Name is Beverly Pape. I live at 5931 Encore Dr., Dallas, Texas 75240
2. I currently experience EMR sensitivity when using the telephone and the computer. Telephone calls are kept to a short duration as I experience a spike in blood pressure and am not able to tolerate blood pressure medication. I do not use the computer at all as I am hypersensitive to its output. I enter into a general malaise, my thinking becomes confused, a headache can occur, and I can feel quite ill.
3. I have had breast cancer and continue to be under doctors' care for that and for other immune system disorders.
4. My concerns about EMR have prompted me to research the issue. I am aware of the following:

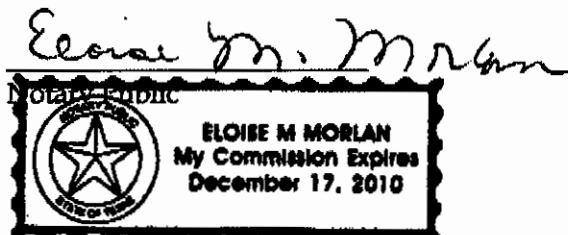
The International Association of Firefighters in August, 2004, adopted a petition by its membership which included a refusal to use fire stations for cell phone towers and/or antennas because firemen were suffering ill effects from such placements "until a study with the highest scientific merit and integrity on health effects of exposure to low intensity RF/MW radiation is conducted and it is proven that such sitings are not hazardous to the health of our members."
5. I wish to adopt the above statement as one I would echo in calling on the United States government to withhold permission for moving forward with present plans to increase low intensity RF/radiation with the installation of Wi Max and other such systems.
6. Based on my research of the issue and on my own personal experience, I consider low level RF/MW radiation to be an immune system stressor, a hazard that no one can afford.
7. Because I believe that science is yet to prove safety and there is increasing worldwide evidence as to the hazard of EMR exposure I hereby designate the EMR Policy Institute to speak on my behalf on this FCC proceeding for the purpose of defending my rights to be safe in my own home.

Beverly Pape
Beverly Pape

Sworn to before me

This 3 day of June, 2009

EXHIBIT 18



AFFIDAVIT OF VALETTA KAYDA

State of Washington

SS.

County of Cowlitz

Valetta Kayda being duly sworn deposes and says:

1. My name is Valetta Kayda. I live at 506 S. Goble Creek Rd., Kelso, Washington 98626.
2. I have lived in Kelso, Washington since August 2008. I moved here after I could no longer live in my Seattle apartment (~~654~~ NW 52nd Ave, Seattle, WA 98107), or my Redmond, Oregon home (2320 SW Indian Ave., Redmond, Oregon 97756) due to my severe hypersensitivity to electromagnetic fields, which developed in March 2008.
3. The high level of electricity in general and my neighbor's work on computers from next door in Co. Hl. EXHIBIT 19

painful to me.

4. During the 2 years I lived in Seattle a change had taken place in Redmond, Oregon. A cell phone tower had been placed on Ray's grocery store across the street from my home. The pain I felt from the cell phone tower made it impossible for me to return to live in my Redmond home.
5. Although there are fewer cell phone towers near my rural Kelso home, than there were in Seattle or Redmond, I am unable to live in a safe haven free of their influence and I continue to have symptoms.
6. I have been unable to work since April 14, 2008 due to my EMF hypersensitivity.
7. Thirty-one years ago I had a benign acoustic neuroma removed surgically by Dr. David Zorub, of Pittsburgh, PA.
8. I worked most recently from August

of 2006 to April 14 2008 for Edmonds School District in Lynnwood, WA. Those years of work were in Wi-Fi buildings. I had not worked in Wi-Fi buildings before.

9. Although I had not had any CAT-SCAN indications of tumors (since my surgery) in the years preceeding my work at Edmonds school District, following almost 2 years of work there in WI-FI buildings an MRI showed a recurrent Schwannoma.

10. I received 2 MRIs and Radiation treatment for the Schwannoma. Following (Gamma Knife Radiation) treatment I quickly developed the severe hypersensitivity to electromagnetic fields which I continue to have today.

11. I believe the symptoms I originally went to the doctor for were related to a mild form of EMF hyperseusitivity, but when the small tumor was found these other symptoms were not investigated. I believe my work in Wi-Fi is

symptoms of EMF hypersensitivity, as well as for the return of my benign tumor.

12. Since all of this has happened I have thought differently about the new technologies and their rapid spread. I have grave concerns for my own safety and for the safety of others exposed to the electromagnetic radiation in the environment. I do not wish for anyone else to have their life turned upside down like mine has been. I also fear that I may not survive the changes that are proposed for providing high-speed internet service throughout the country — FCC 09-31, A National Broadband Plan for Our Future.

13. My hypersensitivity to EMF has greatly negatively impacted my elderly parents (both 85 years old) lives and my daughters lives. They have provided me with emotional support and physical help throughout this ordeal and continue to do so.

14. We have read many studies which support our concern that this technology is dangerous. My daughter has personally spoken with professors doing such research at the University of Washington. Because it is so vital to my health we are trying to learn all we can about EMF research. Until there is a way to ensure my safety and the safety of others from the overlapping signals we are exposed to in our environment and until the health effects of long term exposure to EMF is better researched and understood, I and my family would like to see a moratorium on further development of these wireless systems across our country.

15. I feel I have already lost my health, my apartment, my home and my job. If this national wireless system goes through will I lose my country too? I fear I will. I also fear it will go worldwide and then I will have no escape. Although it is currently my problem, it may

become the problem of many other people, for I fear as more people are exposed to WI-FI they too will develop EMF hypersensitivity.

16. I do not want to continue being a guinea pig in this real life experiment in EMF exposure.

17. I think as a citizen of the United States I should have the right to choose whether or not I live, work and play in WI-FI environments. I should not have them forced on me unvoluntarily, against my will.

18. I should as a U.S. Citizen have a right to be safe in my home, school, workplace, and other environments.

19. It is my understanding that the EMR Policy Institute is preparing to submit comments in the current Federal Communication proceeding to develop the policy for

providing high-speed internet service throughout the country -
FCC 09-31, A National Broadband Plan for Our Future.

20. I, the undersigned and all of my family (2 parents and daughter) hereby designate The EMR Policy Institute to speak on our behalf on this FCC proceeding for the purpose of defending our rights to be safe in our own homes, schools, workplaces and neighborhoods from an invasion of wireless signals that may (and we strongly believe will) hurt us. The FCC's current RF exposure guidelines are inadequate to protect us as we can clearly see from current scientific studies.

21. I request that the FCC accept and consider this document and the attached exhibits into evidence for consideration under FCC 09-31, A National Broadcast Plan for Our
Ft. ... it is ...

of the existence of an individual with EMF hypersensitivity and of signals to which my family and I are subject against ~~our~~ will, yet without proper standards based on current science.

Sworn to before me
this 4 day of
June 2009

Valetta A. Kayda
Valetta A. Kayda

6/4/09

Tracy A. Evans
Notary Public



Diary of Valetta Kayda's symptoms (past and current)
12/12/08

Prior to gamma knife radiation, the symptoms my mom had were:

- mild transient supra auricular temporal area heat and movement sensations
- a slight change in balance (could not balance standing on one foot with eyes closed)
- slight visual changes (occasional blurred vision)
- a mild increase in blood pressure

At that time she was still able to work full time and lead a normal life

In the first few days after radiation she experienced:

- enormous face and head swelling and numbness on the entire top of her head
- intense lower back pain that made it difficult to sit, lie down and walk
- extreme fatigue
- shooting stabs of pain to general head area and left chest areas (sensations like that of electrical shocks being administered), not relieved by aspirin
- sensations of intense whole body vibrations that disrupted her sleep. She describes this sensation as similar to that created by touching an electric fence with a wooden stick, but much more intense.

The face and head swelling, and the back pain went away within the first month. The numbness remained for several months, but finally diminished.

She attempted to return to work from April 7 to April 11 of 2008, but the shooting stabs of pain in her head and chest increased in intensity, frequency and duration, creating a sensation that felt like a continual electric current running through her head. This pain and sensation was not relieved by aspirin. The sensation of whole body vibrations also increased, becoming disconcerting, distracting and extremely uncomfortable which greatly interfered in her ability to sleep and concentrate. Her fatigue increased severely and she began to experience other symptoms as well, including:

- cognitive dysfunction, including impaired memory and concentration
- muscle and joint pain in hips, arms, feet, legs
- feeling of heat and pressure in upper back
- sensations of heat and tingling throughout whole body
- difficulty sleeping. Any sleep she did achieve was fitful, painful sleep with numerous awakenings, chills and night sweats.
- hand and arm numbness
- shooting pains and pressure in chest accompanied by shortness of breath
- instances of irregular pulsing of heartbeat
- instances of intense abdominal shooting pains
- blurred vision and instances of bright flashes of light
- extreme tinnitus

- severe sensitivity to sound resulting in headaches (general ache and shooting pains throughout head)
- throat swelling and hoarseness
- uncontrollable shaking and shivering
- sensitivity to odors that caused her to feel nauseated. Especially chemical odors.
- inability to sustain mental concentration, thinking ability or work effort over any length of time
- reduced speech articulation (developed a lisp)
- reduced language word finding ability
- due to the extreme pain, fatigue and cognitive difficulty she was experiencing she became extremely anxious, fearful, irritable and depressed, often crying uncontrollably during the day and throughout the night.

By the end of the week of April 7-11, 2008, in which she attempted to return to work, her symptoms were so severe that she was unable to continue working.

When Dr. Srinivasan initially suggested steroids to reduce brain swelling my mother was concerned that steroids might lower her immune system. As her health continued to deteriorate further she decided to try taking them, but she did not see much improvement in her symptoms.

Shortly after her final contact with Dr. Srinivasan on April 14, 2008 I, her daughter, had to take over for her in decision making for activities of daily living due to her worsening condition. She was able to dress, bathe and feed herself, but aside from that she was incapacitated by the pain and fatigue she was experiencing. I acted in this capacity until late summer when she finally began to experience some improvement in her health that allowed her to once again take on some of the decision making for her daily activities. Even with this improvement she still relied heavily on the care and support of her mother and me, who took turns watching over her and caring for her.

I had located Dr. Ogle to be my mother's primary care physician. Under his care she began to see improvements in her health and a decrease in the intensity of her symptoms. She is still experiencing the majority of her symptoms, though, and is still unable to lead a normal life or perform the material duties of her own occupation or any occupation. She no longer cries uncontrollably due to pain but still experiences:

- Pain that leaves her fatigued, irritable and anxious
- vibrations throughout her whole body (as described above)
- word-finding difficulty
- reduced speech articulation (a lisp)
- cognitive dysfunction, including impaired memory and concentration
- occasional shooting or aching muscle and joint pains in arms, hands, feet and legs
- tingling in arms, legs, feet, hands and top of head
- heat and burning sensation in chest, head, hands, arms and legs
- difficulty sleeping, including arm, hand and head numbness
- visual disturbances: seeing bright flashes of light, especially when awakened at night

- instances of rapid and irregular heartbeat
- fatigue
- tinnitus
- sensitivity to sounds resulting in headache (general ache or shooting pains throughout head)
- sensitivity to odors resulting in nausea
- sensitivity to artificial lighting resulting in headaches (general ache or shooting pains throughout head) and inability to concentrate and think clearly

These symptoms have been chronically present in her since they appeared eight months ago and they appear to intensify and be exacerbated when she is exposed to electromagnetic fields (especially those emitted from computers and wifi). She has modified her life to avoid electromagnetic fields, irritating sounds and irritating odors as much as she can, which has helped decrease the intensity of her symptoms, but the symptoms are still constantly present and disabling.

Her occupation requires:

- a good memory
- precise articulation
- excellent language skills
- hours of intense concentration
- complex problem solving
- patience with clients
- hours of documentation, evaluation and report writing
- presentations in meetings to parents and colleagues
- use of computers

With her present condition she does not meet any of these requirements that are necessary to perform her occupation.

The above information is all information that my mother has dictated to me to send in an email to Dr. Ogle. I think it may also be of note to mention a few more things that I have noticed:

- In compiling this information it took multiple times for me to explain to her what information I needed from her about her symptoms. I repeatedly had to reword my questions because she did not understand what I was asking.
- It has taken several short increments of thought and conversation spread out over a couple of days to compile this information because my mother was not able to sustain concentration for any length of time.
- She has great difficulty verbalizing what she is feeling. This never used to be a problem for her.
- Although she is no longer reliant on me for decision making of daily activities she still requires my help and her mother's help in many areas of her life due to the fatigue, pain

and cognitive dysfunction she is experiencing. These include grocery shopping and help filling out paperwork among other things.

AFFIDAVIT OF KATIE SINGER

State of New Mexico]
] ss.
County of Santa Fe]

KATIE SINGER being duly sworn deposes and says:

1. My name is Katie Singer. I live at 2556 Camino San Patricio, Santa Fe, New Mexico.

2. I have lived in Santa Fe County for 17 years. I live 1/4 mile from Santa Fe High School, which has a cell phone tower on the property that has operated by Alltel since summer, 2008. The RailRunner train that began operating this year plans to provide free wi-fi via Wi-MAX; it runs about a mile from my house. I am surrounded by neighbors who have their own wireless internet networks.

3. The operation of these microwave-powered devices gives me grave concern for several reasons. My health has been significantly affected for over a decade by devices that use less power. If I use a cell phone for five minutes, my nervous system becomes agitated. I feel dizzy and get headaches. If I use a computer, even for 20 minutes, I develop flu-like symptoms that last for three weeks. For the last several years, my eyes have become increasingly blurry and strained, and I experience constant earringing. I have tried numerous remedies from MDs and alternative health care providers, but my vision continues to be impaired and my ear continues to ring. The installation of microwave-powered devices, including broadband, makes me especially vulnerable because I have no place to go to escape them.

4. Since 1997, I have taught and written about reproductive health. My books include *The Garden of Fertility* (Penguin, 2004) and *Honoring Our Cycles: A Natural Family Planning Workbook* (New Trends, 2006).

5. I continue to be alarmed by the health of women of childbearing age who take my classes. 25% of my students do not ovulate, or they do not ovulate regularly. Anovulation can indicate cardiovascular problems and a greater risk of certain cancers. A woman's reproductive health can be disrupted by exposure to pesticides, sugar, pharmaceutical use and electric lighting at night. Increasing exposure to EMFs and microwaves adds to the stew of environmental toxins that young women are commonly exposed to. Several women have reported to me that since installing Wi-Fi, they have developed insomnia and debilitating PMS that leave them unable to work.

EXHIBIT 20

6. The human body has no defense against microwaves. Installing a national broadband system jeopardizes everyone's health and that of the next generation.

7. I urge the FCC to value human health above convenience.

8. I understand that the EMR Policy Institute is preparing comments to submit in the current Federal Communications Commission proceeding to develop the policy for providing high-speed internet service throughout the country via FCC 09-31, A National Broadband Plan for Our Future.

9. The undersigned hereby designates the EMR Policy Institute to speak on my behalf on this FCC proceeding for the purpose of defending my right to be safe from signals that may cause harm in my own home, workplace and neighborhood. The FCC's current RF exposure guidelines are inadequate in light of the findings of current science.

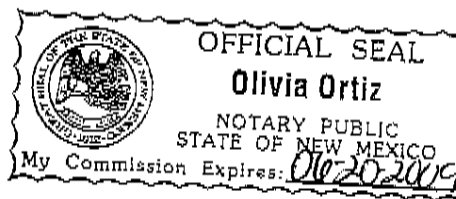
10. I ask that the FCC accept this affidavit and the attached exhibit into evidence for consideration under FCC 09-31, A National Broadband Plan for Our Future, as it is material evidence of the existence of signals to which my students and I are subject without proper standards based on current science.

Katie Singer
Katie Singer

Sworn before me

This 5th day of June, 2009

Olivia Ortiz
Notary Public



State of New Mexico

County of Santa Fe

The foregoing instrument was acknowledged
before me this 05 day of June 2009
by Katie E. Singer.

My Commission Expires: 06-20-2009
Notary Public

Affidavit of Jo-Tina DiGennaro

STATE OF NEW YORK)
)ss.:
COUNTY OF NASSAU)

JO-TINA DIGENNARO, being duly sworn, says:

1. I reside at 8 Robert Road in Bayville, NY. 11709. I have lived at this location since September, 1977. My home is one long city block from the Bayville Water Tower, which now seconds as a cell tower.
2. I have been very active in my community and keep abreast of what is going on. I have been involved in the schools as a parent, grandparent and substitute teacher.
3. I had no idea or notification of the first cellular antennas that were installed under a previous administration (different Mayor and Village Trustees) in 1992. I would venture to say that no one knew of these antennas, as there were no public hearings and the immediate residents were not notified my mail.
4. Sometime between 2005 up to the fall of 2006 the Water Tower was sanded and painted and myself and other residents wondered what all of the equipment was on the ground, and what was taking so long. I, along with others, assumed that the equipment had to do with the water tower. Given the novelty of the telecommunications industry, who even knew what an antenna looked like.
5. When I finally became aware that there were cell phone antennas on the Water Tower (sometime in 2006), I contacted the Mayor and had a telephone discourse voicing my concern about their proximity to our schools (just 50 feet from our elementary school) and our homes. I did not know at this time the number of cell phone antennas that were up on the tower. She spoke about a Local Law that was enacted so that these "things" (cell towers) would not pop up all over the Village. The Mayor and Trustees then decided to have all antennas placed on Municipal property so that the taxpayers would reap the benefits of the revenue. She assured me of their safety and also stated, "If I had been Mayor in 1992 I would never have put the original antennas up."
6. There is a previous local law to the one mentioned above (2002-8) which clearly states the Village's concern regarding both the health effects of this new technology, and the character change to the Village that might occur from these cell towers. It also states the procedures that the cell phone companies must follow in order to get Special Use Permits in the Village (notice, signage, etc.).

EXHIBIT 21

Many of these regulations were ignored when the antennas moved over^{to} the Municipal property housing the Water Tower.

7. In January of 2007, approximately two and one half years ago, I became aware of the enormity and totality of the cell tower issue while taking a walk in the neighborhood. I met a man with a petition opposing the proposed Police microwave radio antennas to be added to the Water Tower. There had already been two public hearings on the issue, but although I read Newsday and the Local Papers frequently, did not see a public notice for these particular hearings. He told me that the third meeting was to be held the following week (as it turned out the date was changed, but having found out the correct date, February 1, 2007, I made plans to attend the meeting), asked me to sign the petition, which I did, and at that moment discovered that there were already 52 cell phone antennas up on the Tower. This was amazing news to me, given that I only live one block away and was never notified as to what was going on. I think the sanding and painting further delayed the truth of the situation.

8. I attended the third public hearing for the police antennas, and together with my husband (who is a health professor with experience teaching environmental health), voiced our deep concerns about the location of these new antennas, as well as the numerous antennas previously installed. **The fact that they sit on our water supply, are across the street from our elementary school children, and are located in a densely populated neighborhood, concerned us deeply.** More disturbing than this was that they were installed and proliferated to such a great number without my knowledge.

9. From February 1, 2007 until the Police vote on April 23, 2007 myself and other residents wrote several letters to the Mayor, a letter to the Village Attorney, got a petition and letter out to Executive Suozzi that was signed by 50 residents, wrote to Congressmen and Senators, contacted an expert in environmental policy making (Cindy Sage) and encouraged the Mayor and Village Trustees to speak to this environmental consultant. We shared a DVD entitled, "Public Exposure. DNA, Democracy, and the Wireless Revolution," that featured the expertise of Ms Sage and many other members of the scientific community. Nothing appeared to change the minds of our Governing body.

10. The petition I signed along with 250 other residents was given no credibility. When I questioned the Mayor as to why she did not take these petitioners seriously, I was told that she had gotten several calls from residents stating that they felt pressured to sign the petition because a friend or family member asked them to and, thus, decided to reject all 250 of them. If there were 5 such calls (the residents who asked for signatures were young concerned mothers—hardly threatening), there was no reason to reject all of the other petitions.

11. These antennas clearly violate 2 restrictive covenants of the deeded "gifted" property to the Village of Bayville. When, during my conversations with the

Mayor, I questioned breaking the clearly written covenants of the deed of this property, she told me on a number of occasions (and even stated this in a letter to me) that had she been the Mayor in 1993 she would never have permitted the first antennas to be placed on the Water Tower and implied that she felt that they were illegally placed in the first place, but since the Telecom Act of 1996 and the events of 9/11, that her hands were tied. She further felt that Federal Law trumps State and Local Law (even though the Telecom Act does give great authority to Local Government to decide the proper location for cell towers.

12. I attended the April 23, 2007 meeting to see how the Village would vote on the Police equipment. The vote was sandwiched between a couple of other minor issues (even though the standing room only crowd was there for this decision—the majority clearly opposed to the addition of more antennas to this already compromised tower) and before we knew it, the decision was passed (5 yes 2 no).

13. Also at this meeting, some residents opposing the antennas challenged Dr. Cotton's (the Village "expert") earlier remark wherein he stated that the residents should not be concerned with the proposed police antennas **but, rather, with what is up there already.**

14. My husband and I, and several other residents voiced our dismay over the vote. When one of the residents said to the Board, "What can we do now?" the Mayor replied, "Take it to Court"—**we have for the last 2 and ½ years at our own great personal expense.**

15. I hope I have been able to convey how I was really kept in the dark regarding the original installation and proliferation of the cell tower, and when finally becoming fully aware of the situation (during the Police Hearings) went into full swing to try and correct a completely unjust, not to mention dangerous situation in our Village.

16. After researching the dangers of radiation from cellular telephones and cell towers, I have personally discarded the cell phone that I owned. This is my free choice, but a cell tower with 52 antennas and more to come, located 150 feet from my home is not my choice and has caused me mental, emotional (having a dearly loved granddaughter, age 8, attending the school 50 feet away) and financial stress.

17. I feel that the location of this cell tower just 50 feet from our Elementary school—slightly further for the Intermediate School down the hill—is just too close for my comfort. There are too many unknowns as to the long term health effects from this type of radiation—especially to children.

18. The fact that the present Government safety standards used to site cell towers are being questioned all over the world, should send a clear message to our tiny Village of Bayville to adopt the Precautionary Principle—and relocate this cell tower away from this location until the enforcing bodies can state unequivocally that there are no long term ill effects to the general population living near cell towers. We should not have to wait for the body count, or cause needless illness and suffering.

19. My husband has suffered a bout of prostate cancer. There are at least 3 other gentleman on my block (that I know of) that have been diagnosed with this type of cancer. My husband certainly should not have been a candidate for this disease as he has always had the most impeccable health habits including good diet, regular exercise regimens and a genetic background that did not predispose him for prostate cancer. I can only wonder if the cell tower, in such close proximity to our home, was a contributory factor.

20. We also have an above average number of children with EMR Cancers such as leukemia and brain cancer. Three children have died and two are presently in remission. As the mother of one of the boy's who is blessedly in remission has stated repeatedly to the Village officials, "I cannot say that the cell tower was the ultimate cause of my son's cancer, but you cannot say that it was not."

21. As a proud American I have always felt so fortunate to enjoy the freedoms that we all enjoy. In the case of the building out of the wireless network, I feel laws have been passed (the Telecommunications Act of 1996) that take away our freedom to argue health concerns, when these cell towers appear in our neighborhoods. In our Village, laws have been broken, deeds have been violated and residents' concerns have been completely ignored. My question is, "Who is being protected here—the Telecommunications Industry or the general population affected by this infrastructure?"

22. Wireless communications are amazing—and will probably be able to accomplish great good—but **never, never, never** at the immeasurable cost of loss of health and well being to the general population.

WHEREFORE, based on the foregoing, it is respectfully requested that the FCC consider the latest scientific research (like the Bioinitiatives Report), when determining appropriate safety standards for this proliferating wireless industry. Further might I suggest large setbacks of cell towers in relation to schools, nursing homes, hospitals, parks, neighborhoods, or any place where human beings (especially children) congregate.

I also respectfully request that the EMR Policy Institute represent my interests before the FCC and other bodies considering these issues.

Jo-Tina DiGennaro
Jo-Tina DiGennaro

Sworn before me this 30
day of June, 2009

Madeleine C. Petrara
Notary Public

MADELEINE C PETRARA
Notary Public, State of New York
No. 02PE6142629
Qualified in Nassau County
Commission Expires March 20, 2010

AFFIDAVIT OF MADELEINE C. PERRIN

State of New York]
]
County of Nassau] ss.

MADELEINE C. PERRIN being duly sworn deposes and says:

1. I live at 10 Bell Lane, Bayville, New York with my husband, Rene, and two young children, Michelle and Julia, ages 6 and 4, respectively. My house is approximately ½ mile from the Bayville cell tower (the Bayville water tower).
2. I submit this Affidavit in support of the FCC's consideration of FCC 09-31, A National Broadband Plan for Our Future, as it evidences my opinion that the current FCC guidelines on electromagnetic radiation are inadequate and need to be revisited taking into consideration the current science demonstrating non-thermal effects of long term exposure.
3. I have lived in Bayville a little more than three years and absolutely love my small, hometown community. About two years ago, at a local meeting for the proposal of additional police antennae on top of the Bayville water tower, I discovered that there were already existing on the Bayville water tower approximately 52 cell phone antennae of various cell phone companies.
4. I was first shocked and then became overwhelmingly worried because my daughter Michelle was attending the Bayville Primary School for 8 hours a day, five days a week. The Bayville Primary School is no more than 50 feet from the foot of the Bayville water tower (a/k/a the cell tower hosting 52 antennae).
5. I, along with many other residents and parents of school-age children plead with our Village officials to reject the proposal of new antennae and to move the current antennae off the water tower and away from the schools.
6. When the Village officials flat out rejected the proposal of its citizens - because the RF radiation emitted from the current antennae were purportedly "within FCC guidelines" - I attempted to register my daughter in two of the neighboring elementary schools (Oyster Bay and Locust Valley). I was turned down by both of these schools.
7. My younger daughter Julia will begin Bayville Primary School in September 2009 and now I am even more worried as I will have two children attending the school - just 50 feet across from the cell tower.

EXHIBIT 22

8. Since my discovery of the abundance of cell phone antennae across from the Bayville schools, I have read a multitude of literature, articles, essays, reports, etc. regarding electromagnetic radiation and the potential health hazards associated with such radiation. The more I read, the more I become worried.

9. While I do notice there is some dispute in the scientific community as to the health effects of RF radiation, the one common thread throughout, or rather, the absence of one common thread – is that there is no one who can say that such antenna are absolutely safe!

10. While the 52 antennae just 50 feet across from my daughter's school are "within FCC guidelines", no one can promise me they are safe. This is a grave concern to me and it does not take a rocket scientist to figure out that maybe it is the FCC guidelines which must be called into question.

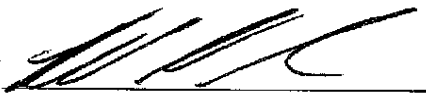
11. Is the FCC beyond reproach that they may have been wrong at the inception of this new technology which has gotten so widespread in such a short period of time? I doubt the FCC guidelines and implore our government, of which I am so proud, to revisit them with the health and safety of its people at the forefront of its concern.

12. I understand that the EMR Policy Institute is preparing comment to submit in the current Federal Communications Commission proceeding to develop the policy for providing high-speed internet service throughout the country - FCC 09-31, A National Broadband Plan for Our Future.

13. I, Madeleine Perrin, designate The EMR Policy Institute to speak on my behalf on this FCC proceeding for the purpose of defending my right, as an American citizen, to raise and educate my children in a safe environment free of harmful exposures.

Sworn to before me

This 4 day of June, 2009




Madeleine C. Perrin

Ralph Scannell
Notary Public, State Of New York
No: 015c6105276
Qualified In Suffolk County
Commission Expires 2-9-12

AFFIDAVIT OF FRANCES MARIAN P ROLLANS and JAMES F ROLLANS

State of North Carolina

County of Rowan

MARIAN ROLLANS AND JAMES ROLLANS being duly sworn deposes and says:

1. My name is Marian Rollans. I am a 65 year old retired school teacher/farmer. I live at 14460 NC Hwy 801, Mount Ulla, North Carolina. We have for years planned and worked on our 277 acre farm so that it is a renewable, sustainable, productive operation that provides both food and timber to supply both local and regional markets.
2. My husband, James, and I have made Mount Ulla North Carolina our home for the past 39 years. This 1895 house is our home that we rescued from deterioration by spending 5 years restoring. When we moved here in the 70's only one tower was visible from our house. That was a radio/cell tower on Young's Mt. in Cleveland, NC. which is about 7/8 miles away. Two additional cellular towers have been added on the Young's Mountain site.
3. Now when I go outside my house at night I can see lights from 3 tall broadcast towers and 4 cellar towers.
4. I suffer from electro-hypersensitivity. I noticed several years ago when we would drive into Mooresville NC on 150 Hwy where 3 towers are clustered that I could feel the bombardment of EMR rays which would make my head hurt and actually hurt my ears. I could not even use a cell phone without feeling a piercing sensation going into my ears.
5. We purchased Q-Links and a neutralizer for our cell phone as well. This has helped some but with the accumulation of rays coming from 2 towers within 2 miles and 5 within a 7/8/9 mile radius the Q-Links are like putting a band aid on a 5" cut.
6. In 2003, Davidson County Broadcasting Inc began trying to put a 1350' radio tower off Hwy 801 on Richard Parker's active dairy farm. Our farm is adjacent to the Parker's farm. This site is also close to an airport. The permitting of this tower was turned down by Rowan County Commissioners on a safety issue. The Commissioners decision has been upheld in 3 courts in North Carolina. We have court records and legal documentation from expert witnesses on the Rowan County Commissioner's decision and briefs from court appeals. Now DCBI is back trying to site a 1200' radio tower on the same site. The amount of power these telecommunication companies have over individual's health, safety, and welfare is appalling. If another tower goes in within ¼ mi from my house I suppose I will have to move because of my sensitivity to EMR radiation. Where do an individual's rights fit into the picture?
7. I am concerned that EMR sensitivity is more prevalent in children and women as my own personal experience indicates.

Exhibit A. NATIONAL RESEARCH CENTER FOR WOMEN & FAMILIES: Can Cell Phones Harm Our Health?

Trent University, Peterborough, Ontario, Canada has been involved in EMF research for many years.

EXHIBIT 23

Exhibit B: 1) Analysis of Health and Environmental Effects of Proposed San Francisco EarthLink Wi-Fi Network; 2) Testimony by Magda Havas, PhD concerning Health Effects Associated (with EMF) from Power Line; 3) "Health Effects Associated with Radio Frequency Radiation" (This was her expert testimony at the quasi-judicial hearing before the Rowan County Commissioners on Oct 10th 2005);

Exhibit C: SERIOUS FLAWS WITH THE FCC RF/MW SAFETY GUIDELINES adapted from B. Blake Levitt. The FCC doesn't have the manpower to monitor cumulative emissions from numerous towers nor do they accept such responsibility. Therefore, all of us and especially those more sensitivity to EMF radiation (women & children) are at the mercy of a multibillion dollar industry who is asked to monitor itself. "The fox is monitoring the henhouse."

Exhibit D: 1)Connecticut PTA Resolution; 2) Resolution passed by the Los Angeles Unified School District B, June 27, 2000; 3) In Mount Ulla NC near my home (that already has 7 towers surrounding it) there is an elementary school 1 and ½ mi from my house and from the proposed DCBI tower site. Since cumulative effects are not monitored by the FCC should towers be prohibited close to elementary schools because of the sensitivity of children to low frequency RF emissions? What and why are we allowing our children to be bombarded by EMF's from towers?

The Issues:

Above is a small sample of the voluminous body of research seeking to reach a definitive conclusion to the relationship between human health and electro-magnetic-radiation. Though concrete answers are not yet available the following facts are established which give cause for concern and call for further study. In the meanwhile we ought to proceed with extreme caution.

There are no international standards for tolerable and safe levels of exposure.

Women and children are more sensitive to EMR exposure than adult males.

The FCC is not charged with, nor prepared, to monitor EMR emissions.

The allowable level of EMR emissions in the USA is higher than most other countries.

The number of transmissions and receptions involving EMR is increasing daily.

The communications industry is the primary provider and generator of EMR.

The communications industry is motivated, not by concern for the long term health of consumers, but by the immediate level of return for its monetary investment. (profit)

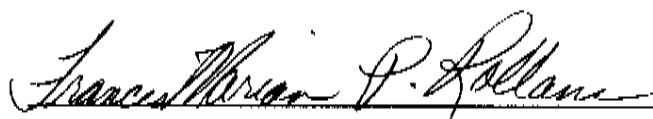
Comprehensive regulatory authority for the health safety and welfare of the exposed public is non-existent. Regulation for public safety with regard to EMR exposure is a splintered, ineffective system of local state and federal agencies. The protective system is replete with overlaps and gaps and filled with underfunded, untrained individuals burdened with solving a complex and highly technical problem that changes so rapidly that the target moves faster than the speed of the bullet that pursues it.

There is a growing belief within local school boards, city and county governments and other public and private bodies that since the body of research has been unable to prove that human exposure to even low levels of EMR is safe in the long and short run that the prudent policy is to limit or mitigate avoidable contact.

8. Our family, in concert with our community, has spent money and hundreds of hours of study and preparation to oppose the permitting of a large radio broadcast tower on property that joins our farm. The issue has divided the community and caused us much vexation and anguish. It is safe to say that the issue has consumed our lives for the past six years. The potential threat of such a large emitter of EMR so close has drained us emotionally to the point that sleep is no longer a natural and refreshing experience and normal daily activities are impossible because the constant and repeated attempts to site the tower are always lurking in the corner of our minds. It even affects the normal family relations with our children. When they visit they become irritated and complain that all we talk or think about is that "potentially dangerous" tower.
9. At a planning retreat this spring the county communications officer made a presentation to the Board of Commissioners. His program included the changes needed to bring the county into compliance with the FCC mandated digital conversion over the next few years. He explained that there are so many new cellular and police and EMS users now that the air waves are increasingly crowded to the point that reliable emergency communications are no longer reliable. We are concerned that safety precautions for this increased communications activity is not keeping pace with the accelerated growth of EMR emissions.
10. With the increased number of signals in the airways across the spectrum of cell phones, radio waves, broad band TV, etc. how are we the public to know that safe levels of EMR have not been exceeded? In our quest for security from terrorist activities and safety from natural disasters have we created a new health threat that is impossible to see, smell, taste or feel? How can the office of Home-Land Security monitor this increased number of signals with continued accuracy?
11. Without monitoring of the accumulative effects of EMR emissions, we the American public are at the mercy of a giant telecommunications industry with their powerful lobbying groups. We do not want to be guinea pigs for the government-sanctioned rollout of new technologies that have insufficient safety standards based on insufficient knowledge about long-term effects of these wireless signals.
12. We want the FCC to establish standards that have public safety as the top priority and the regulation of permitting as a service to those who wish to use the public airways. Also we are very concerned that the monitoring of existing and cumulative EMR levels be established,

funded and carried out on a continuing schedule by a division that is independent from the division that has the authority too permit.

13. Since we live in an area that is exploding with urban growth we want the assurance that demand for expanded wireless services will not receive precedence over the public necessity to feel and be safe from the dangers of this unseen health threat. We look to the FCC to provide that security.
14. We urge you to extend careful consideration to the forthcoming recommendations from the EMR Policy Institute with regard to development of a nation-wide high-speed internet service.
15. The undersigned and all persons in our household hereby designate The EMR Policy Institute to speak on our behalf on this FCC proceeding for the purpose of defending our rights to be safe in our own home, in our schools and workplaces and neighborhoods from the invasion into our home, schools and workplaces of signals that may cause harm to us, because the FCC's current RF exposure guidelines are inadequate in light of the findings of current science.
16. I ask that the FCC accept this affidavit and the attached exhibits into evidence for consideration under FRCC 09-31, A National Broadband Plan for Our Future, as it is material evidence of the existence of signals to which my family and I are subject, yet without proper standards based on current science.



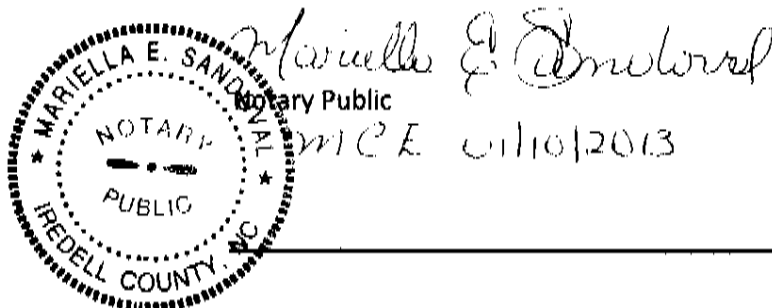
Frances Marian P Rollans



James F Rollans

Sworn to before me

This 4th day of June, 2009



AFFIDAVIT OF BETSY WEBSTER

State of North Carolina

SS.

County of Rowan

Betsy Webster being duly sworn deposes and says:

1. My name is Betsy Webster. I live at 14230 Highway 801, Mount Ulla, North Carolina.
2. My husband and I have lived in Mount Ulla for 30 years. We live in a rural agricultural community and have been fighting the construction of a 1300 foot radio broadcast tower for 5 years. The community is surrounded by as many as 15 existing towers.
3. The operation of these towers has given me and my family cause for concern. This fast growing industry has done little to research itself and towers continue to go up at an alarming rate.
4. Because of our concern we do own a cell phone but it is seldom on except for emergencies.
5. Please note the North Carolina tower numbers by height class 1998/2004 submitted as Exhibit A You can see the incidence of tower growth in this state.
6. Because of the number of antenna operating in our area, we have many overlapping signals and are concerned that there are insufficient safety standards to manage the exposure to our family to these signals.
7. We are concerned about health effects of long term continuous exposure to one or many signals.
8. We do not want to be guinea pigs for the government sanctioned rollout of new technologies with insufficient safety standards or without sufficient knowledge about the long term health effects of these wireless signals.
9. Without strong FCC standards and the enforcement of such standards, we fear the hazards to our family's health of this low level radiation over time.
10. We understand that the EMR Policy Institute is preparing comment to submit in the current FCC proceeding to develop the policy for providing high speed internet service throughout the country FCC 09-31. And designate the EMR to speak on our behalf on this proceeding. We feel we are unsafe and current exposure guidelines are inadequate in light of the findings of current science.
11. I ask that the FCC accept this affidavit into evidence for consideration under FCC 09-31 as it is material evidence of signals to which my family and I are subject, yet without proper standards based on current science.

Sworn to before me

This 02nd day of June, 2009

Tiffany Yoxtheimer
Notary Public

my commission expires March 8, 2014



Betsy Webster
Betsy Webster

Exhibit A

Tower Numbers By Height Class		
Tower Classes	1998	2004
200 - 299 Feet	634	972
300 - 499 Feet	632	948
500 - 799 Feet	68	80
800 + Feet	59	70



United States - North Carolina

EXHIBIT 24

AFFIDAVIT OF Ruth Ann Davis

State of Colorado]
] ss.
County of Ouray]

Ruth Davis being duly sworn deposes and says:

1. My name is Ruth Ann Davis. My mailing address is POB 1422, Ouray, CO 81427.
2. I am extremely hypersensitive to all Electro-Magnetic Fields. Being around any source of EMF causes me **severe disruption of sleep function, headaches, body pains, short-term memory loss, arthritic flare-ups, 'brain fog', loss of the ability to concentrate**, and more.
3. Due to this sensitivity, I have lost home, job, life savings, family and friends, and must, in order to survive, live in very remote locations, with no electricity, free from all sources of electro-magnetic radiation...including that from cell phone towers. I do this on both public and private lands, seeking out safe havens where I can live in relative health and free of pain.
4. I know first-hand the debilitating effects caused by cell phone tower radiation, having just spent the last 3 weeks (stranded) living under one. (there was no other source around, so all effects were directly from the cell phone tower - address and carrier unknown, but near Colona, CO, and possibly others in the area - south of Montrose, CO).
5. During those 3 weeks, I suffered from **constant, throbbing headaches, intense body pain, disruption of sleep, nausea, agitation and irritability, increasing exhaustion to the point where I nearly became unable to function**.
6. I was finally able to leave, removing myself to a 0 field environment. After 4 days, my headaches are gone, my body pain is fading, sleep is beginning to return. However, I am left with a complete, debilitating exhaustion. I am barely able to function, using my scant energy to write this affidavit only because this is such an important matter. Yes, I also react to computers and am pushing myself dangerously beyond my limits of pain and exhaustion to write this affidavit. This is indeed, a matter of our very survival.
7. We know, from past, personal experience, that these fields cause damage to the endocrine system, in particular depletion of the adrenal glands. This exhaustion takes weeks, if not months to recover from. Some research says that the adrenals may never completely recover from such an attack.
8. There are numerous studies on the dangers of this cell tower radiation, many cited at www.weeksmnd.com. I am including 24 pages of documentation, including scientific studies, books and website links. **Studies definitively linking cell tower radiation with brain tumors, cancers, leukemia, the early on-set of Alzheimer's, elevated blood pressure, damage to the blood brain barrier and ADD in children.** These studies are telling us what we as hypersensitives already know...that these towers are deadly. Exhibit A: a copy of the

EXHIBIT
25

AFFIDAVIT OF KATHERINE HINSON

State of Vermont

County of Windsor

KATHERINE HINSON being duly sworn deposes and says:

My name is KATHERINE HINSON. I live at 225 Falcon Ridge, Plymouth, Vermont.

My husband and I lived in Atlanta, Georgia for 27 years. We lived within 1-3 kilometers of several cell phone towers. Last fall we moved to an area with poor cell phone reception. We see dramatic health improvements until we travel to areas where cell phone towers have heavy coverage.

We resorted to home schooling to keep the problems from getting worse, not realizing that home ^(Atlanta) was not a safe location either. Yet even with interventions from knowledgeable medical doctors, the symptoms were extremely difficult to treat.

As 3G technologies were rolled out, the symptoms became even worse despite medical interventions.

Our fifteen year-old and our thirteen year-old sons are now electro-hypersensitive and suffer severe nervous system derangement even when near a computer or television at home. Their symptoms are aggravated during visits to libraries with wifi, we believe under the influence of bombardment from wireless signals at such public buildings.

Because of the number of cell service carriers operating in the Shallowford Rd, ^(Atlanta) area, we had many overlapping signals and were concerned that there are insufficient safety standards to manage the exposure of our family to these signals.

As a result, we are concerned about health effects of long-term continuous exposure to one or many signals.

We do not want to be guinea pigs for the government-sanctioned rollout of new technologies with insufficient safety standards, or without sufficient knowledge about the long-term health effects of these wireless signals.

Without strong FCC standards and the enforcement of such standards, we fear the hazards to our family's health of this low level radiation over time.

We are concerned about having to live next to antennas and transmitters if wireless internet is built out in our local environment. We have a right to be safe in our homes

EXHIBIT 26

and our schools and workplaces, and we have a right to current safety standards based on current science.

We understand that the EMR Policy Institute is preparing comment to submit in the current Federal Communications Commission proceeding to develop the policy for providing high-speed internet service throughout the country - FCC 09-31, A National Broadband Plan for Our Future.

The undersigned and all the persons in our household hereby designate The EMR Policy Institute to speak on our behalf on this FCC proceeding for the purpose of defending our rights to be safe in our own home, in our schools and our workplaces and neighborhoods from the invasion into our home, schools and workplaces of signals that may cause harm to us, because the FCC's current RF exposure guidelines are inadequate in light of the findings of current science.

I ask that the FCC accept this affidavit and the attached exhibits into evidence for consideration under FCC 09-31, A National Broadband Plan for Our Future, as it is material evidence of the existence of signals to which my family and I are subject, yet without proper standards based on current science.

Katherine Hinson

Sworn to before me

Katherine Hinson

This 3rd day of June, 2009

Elizabeth A. Gaudes Lombard
Notary Public

2/10/11

~~2 - Comment on FCC Broadband Proceeding~~

AFFIDAVIT OF KRISTIN RUSSO

State of Massachusetts]

ss.

Middlesex County]

TO: 304-932-0022
FCCFrom: Kristin Russo
Affidavit

KRISTIN RUSSO being duly sworn deposes and says:

1. My name is Kristin Russo. I live at 5 Kingsdale Street, Burlington, MA 01803.
2. I just recently moved to Burlington, MA one year ago. I previously lived in Stoneham, MA for over 36 years. When we chose to move we spent countless hours looking at where antennas were sited in other towns and how the zoning was developed to allow for these companies. Even with the effort of the communities to limit the placement of these antennas in areas away from schools and residential neighborhoods, the wireless industry keeps coming before the town of Burlington and Stoneham demanding they be placed outside of the wireless overlay. I have watched the rights of citizens in both communities be tested and compromised by the wireless industry's efforts to expand their business plan. I am deeply concerned by the lack of rights we, as citizens and a town, have regarding wireless bylaws and the placement of antennas and towers near our homes, schools, workplaces, etc.
3. My husband and I have three children; all of whom receive exposure to wireless technology at a level far greater than we are comfortable. The Marshall Simonds Middle School and the Memorial Elementary school in Burlington, MA both lie within direct site of the town's water tower which has over three carriers on it. My parents are in their late seventies. My mother has battled cancer. I am concerned about what effects this technology may be having on their health.
4. I have read studies and articles that lead me to believe this technology is dangerous. Although there are many credible experts here in the U.S. raising concerns about the safety of wireless technology, these concerns have not been downplayed by the wireless industry and our government. The independent research from European countries and Canada gets press and recognized in those countries, unlike here in the United States. I am concerned about allegations that the industry uses its power to prevent and halt studies here in the U.S. In both towns' public hearing, Stoneham and Burlington, I have witnessed wireless companies manipulating their coverage maps by turning off sectors of their antennas to make their hole appear large. In both cases the wireless companies admitted to this after it was discovered by an independent RF engineer hired by the towns. It amazes me that a business can be so deceitful and then stand behind the Telecommunications Act to take a town to court. If this were any other business that tried to do this the town would be the one threatening lawsuit!

EXHIBIT 27

5. I am troubled by the fact that the FCC does take the precautionary principle to heart. This exposure much like that of pesticides is low-level, long-term and continuous. We are starting to in many other countries that have had this technology in effect longer their citizens become the test cases for what can happen to people who are exposure to this technology over time. It is only a matter of time before our health system begins to see a true medical health link that can not be ignored as other countries are now acknowledging.

6. As I come to understand the Telecommunications Act of 1995, I am troubled by the amount of input the wireless industry was allowed to have in creating the laws that govern its own practices. I am further disillusioned by the fact that the rights of citizens are overshadowed by the financial and business interests of the wireless industry. I urge this committee to learn from the history of prior industries (such as tobacco), where public policy took far too long to catch up to the pressures and the powers of big business. I look to the FCC and to this committee to set standards of safety that protect Americans first. I have faith that due diligence will be done on the part of the FCC, and the industry will no longer be permitted to create the laws that govern it—and benefit its “bottom line.” I respectfully request that the FCC make protecting the health and well-being of American citizens its first priority.

6. My children are under the age of ten but they already know not to use anyone's cell phone. We keep our phones off and if they need to be left on, we keep them away from where we spend our time in the house.

7. At the last public hearing I attended in Burlington in May for an antenna placement, the petitioner stated they are looking to come into every neighborhood within the next three years with antennas. We now have another company looking to come into the town in addition to the four already in town. Because of the number of cell service carriers operating in our area, we have many overlapping signals. There is no long-term study completed that looks at how all these signals can affect our health. I am concerned that there are insufficient safety standards to manage the exposure of our family to these ever increasing signals. These companies are looking using stronger levels than back in 2000, going from -84dbm to -76dbm. I am concerned that the service strength is increasing to be strong enough to penetrate cement, while little regard is given to what our bodies can handle over the long term.

8. I do not want my family to be guinea pigs for the government-sanctioned rollout of new technologies with insufficient safety standards, or without sufficient knowledge about the long-term health effects of these wireless signals. There is too much being learned about how our bodies are altered by this technology not to be concerned and put safety measures in place.

9. Without strong FCC standards and the enforcement of such standards, I fear the hazards to my family's health of this low level radiation over time.

6007/E/9

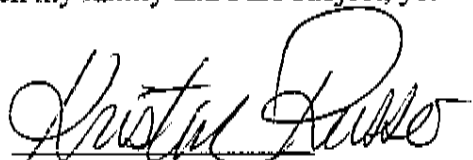
10. I am concerned about having to live near antennas and transmitters if wireless internet is built out in my local environment. We have a right to be safe in our homes and our schools and workplaces, and we have a right to current safety standards based on current science.

12. I understand that the EMR Policy Institute is preparing comment to submit in the current Federal Communications Commission proceeding to develop the policy for providing high-speed internet service throughout the country - FCC 09-31, A National Broadband Plan for Our Future.


13. I, the undersigned, and all the persons in my household hereby designate The EMR Policy Institute to speak on our behalf on this FCC proceeding for the purpose of defending our rights to be safe in our own home, in our schools and our workplaces and neighborhoods from the invasion into our home, schools and workplaces of signals that may cause harm to us, because the FCC's current RF exposure guidelines are inadequate in light of the findings of current science.

14. I ask that the FCC accept this affidavit and the attached exhibits into evidence for consideration under FCC 09-31, A National Broadband Plan for Our Future, as it is material evidence of the existence of signals to which my family and I are subject, yet without proper standards based on current science.

Sworn to before me


Kristin Russo

This fourth day of June, 2009


Notary Public 03/13/10

AFFIDAVIT OF GAYLE H. CLARK

State of Kansas]
]
County of Harvey] ss.

Gayle H. Clark, being duly sworn, deposed and says:

1. My name is Gayle Hensley Clark and I, my husband, and 14 year old son live at 2032 E. 7th, Sedgwick, Ks, 67135.

2. We have lived at this location since December 2004. We chose this rural homestead for it's location and distance away from "modernization" and a couple of months ago Harvey County, Kansas passed the erection of a 199 foot cell tower which will be approximately 770 feet from our front door and approximately 350 feet from the front of our property line.

3. The operation of this cell tower gives me and my husband great concern because of the negative health effects of RF and the close proximity to our home in which the tower will be located.

4. Our son is exposed to wireless technology all day at his school (Sedgwick High School, POB K, Sedgwick, Ks, 67135) and me at work (Daland Corporation, 2414 N Woodlawn, Ste 201, Wichita, KS, 67220) and we all three (3) carry cell phones either for business or emergency purposes, but when we are at home they are put away. We can't "put away" or "turn off" emissions from a 199 foot tower. Towers can, however, be limited in their placement in relation to distance from homes, schools, nursing homes, and wildlife, their levels of emissions, and simply the number of towers that are allowed to be built.

5. Lives of workers have been put in jeopardy by excess exposure from malfunctioning cell towers that emit RF higher than allowable (Decision of the Supreme Court of the State of Alaska No. 6139 – July 6, 2007: AT&T Alascom and Ward North America, Inc. v. John Orchitt and the State of Alaska, Dept. of Labor and Workforce Development, Division of Workers' Compensation). Insurance companies are preparing for the next "asbestos" claim run (The Cincinnati Insurance Company, in 2007, notified their insured, Horvath Communications, owner of several cell towers, that they were "not entitled to either a defense nor indemnity incurred in the *underlying litigation ... under the Cincinnati policies issued ... the alleged damages caused by the microwave radiation were reasonably expected by the insured, and further that the microwave radiation which the plaintiffs complain is a pollutant, and therefore coverage is excluded." (*Hicks et.al. v. Horvath Communication, Cause No. 71C01-0107-CP-1690) and "Debra Avery, a Washington resident and secretary/treasurer of the EMR Policy Institute, noted that even

EXHIBIT 28

G. Clark

big insurance companies, notably Lloyds of London, have refused to insure cell companies, presumably because the health effects are yet unknown." ("If Tower Arrives, Washington Could Be Part of a Key Study", Rebecca Ransom, Litchfield County Times, 06/07/2007)). We can no longer turn our heads and rely on the fact that the glass is half empty.

6. We are also concerned with the biological affects, not just thermal, that constant and long-term exposure to RF will have on both humans and on animals.

7. Because of height of the tower that is to be erected near our home, under 200 feet and to our understanding does not have to be registered with the FCC, we are concerned that there are insufficient safety standards and manpower by the FCC and local telecommunication companies to manage the exposure of our family to these signals.

8. We are concerned about health effects of long-term and continuous exposure. The health community has provided equally as much research proving negative health effects of RF exposure as they have proving the opposite, yet the Government has taken the approach that "the glass is half empty" and protected the FCC in the TCA of 1996 and restricted municipalities of denying construction of cell towers based on health risks. We need to take the approach that "the glass is half full". We do not want to be the "oops...sorry, we were wrong about RF."

9. Without strong FCC standards and the enforcement of such standards, we fear the hazards to our family's health of this low level radiation over time will be significant. We fear the unknown and have historical events to back our fear; asbestos, lead in drinking water pipes/containers and the effects of smoking to name a few. The approach to the broadband plan needs to be a cautious one. Lives are not secondary to technology. We should not be guinea pigs for technology.

10. We are concerned about having to live next to antennas, towers, and transmitters if wireless internet and having them built in our local environment. We believe that because we live in a rural area it is quite possible that municipalities will attempt to "push" the towers out of their towns and into the country...into our backyards, quite an outward display of the "out of sight out of mind" mentality. We ALL have a right to be safe in our homes and our schools and workplaces, and we ALL have a right to current safety standards based on current science. The glass is half full.

11. Secondary to the negative health effects is the impact of cellular towers on property values. Sandy Bond, PhD, a director on the Board of the International Real Estate Society, and former appraiser, and Ko-Kang Wang, a tutor in the Statistics Department at the University of New Zealand, confirmed through statistical analysis that public opinion of cell towers and their negative effect on home prices was supported by actual regression analysis of home sales. "The results of the sales analysis show prices of properties were reduced by around 21% after a cellular phone base station (CPBS) was built in their neighborhood." (Article: "The Impact of Cell Phone Towers on House Prices in Residential Neighborhoods").

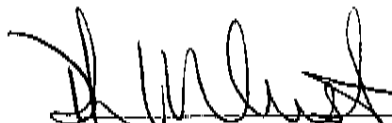
12. We understand that the EMR Policy Institute is preparing comment to submit in the current Federal Communications Commission proceeding to develop the policy for providing high-speed internet service throughout the country - FCC 09-31, A National Broadband Plan for Our Future.

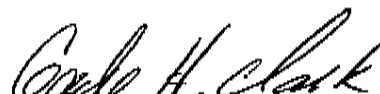
13. The undersigned hereby designate The EMR Policy Institute to speak on our behalf on this FCC proceeding for the purpose of defending our rights to be safe in our own home, in our schools and our workplaces and neighborhoods from the invasion into same places by signals that may cause harm to us, because the FCC's current RF exposure guidelines are inadequate in light of the findings of current science.

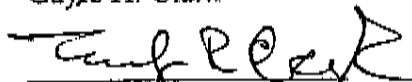
14. I ask that the FCC accept this affidavit into evidence for consideration under FCC 09-31, A National Broadband Plan for Our Future, as it is material evidence of the existence of signals to which my family and I are subject, yet without proper standards based on current science.

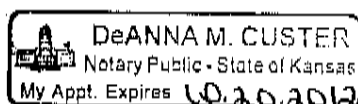
Sworn to before me

This 4th day of June, 2009


Notary Public


Gayle H. Clark


Terry R. Clark



AFFIDAVIT OF LUCY HACKETT

State of Ohio]
]
County of Summit] ss.

LUCY HACKETT being duly sworn deposes and says:

1. My name is Lucy Hackett (now 35 yrs. old) . I live at 2607 Chamberlain Rd. Apt. #2, Fairlawn, OH 44333. My phone number is 330-835-4118 and email is lucyangel@alumni.nd.edu. My former address was 56635 Westfield Rd., South Bend, IN 46619. My former maiden name was Lucy Rzeszutek in 2008 and my new husband is Andrew Hackett (now 38 yrs. old) and my two stepsons Josiah and Silas (now 10 and 9).

2. Before moving to Ohio in August of 2008, I lived in South Bend, IN for 8 years since the year 2000. I worked 100 feet from two cell towers in one work location and approximately 500 feet from a main cell tower in another location, both operated by Hayes, Charles S., 1634 Jefferson Blvd., South Bend, IN 46617. I worked with family members such as my mother, sister, brother, and sister-in-law in a small family owned business. During this time, I met my husband Andrew Hackett and my two stepsons.

3. The operation of these towers has given me and my family concern ever since they were constructed and made operational. The reason being because notable changes in our health began. I noticed in myself how forgetful, tired, dizzy, and drained I felt. I would feel symptoms in addition, but not limited to tingles, heart palpitations, inability to focus, electrical shocks, and more. I am consistently hearing a high frequency (sometimes the pitch will change), but my ear doctor said my hearing was perfect. He said he didn't know why this was happening to so many of his patients. I also have contracted endometriosis while living in South Bend, IN. My husband Andrew Hackett also lived in South Bend for several years and complained about symptoms such as headaches, dizziness, and forgetfulness and contracted a thyroid condition during this time. He also lived near towers and transmitters. After we married and moved to Akron, OH, towers erected near us caused symptoms to flare up. We then moved to another area in Akron where no towers are close by, thus alleviating the symptoms.

4. Upon becoming aware of EMR and investigating, I found out people were protesting against the cell towers because cancer clusters formed around towers in the St. Joseph County area. Four lawsuits were taking place during this time against the cell tower owner Hayes. After speaking with the plaintiffs, I found they were suffering from similar, if not exact, ailments and symptoms.

5. I am electrically hypersensitive and even after eliminating electromagnetic fields, am still suffering from headaches, dizziness, and nausea at differing times. I noticed symptoms are aggravated or increase when near towers, cell phones, computers, monitors, televisions, and power grids. Cloudy and/or rainy days intensify the

EXHIBIT 29

electropollution. As I also was a student at the time, I was appalled to find how quick and intense headaches, pain throughout my body, and dizziness would come upon me wherever there was Wi-Fi offered in the building. After becoming sick, I would look around me and notice students on wireless internet and cell phones in designated areas. I was taken aback as I noticed the symptoms would almost leave instantaneously when I would leave the premises where clustered Wi-Fi was in use.

6. After seeking help from doctors, holistic practitioners, dietitians/nutritionists, professors, and scientists over the years, I know this pollution is real. I have decided not to own a cell phone. I have limited my time on a computer, will not watch much television, and have moved multiple times, so as not to be near towers and power grids or any other such technological threat. I have attempted to find a location where I feel best. Electropollution has caused me added stress as my field is in Film and Television where I would be exposed to many electromagnetic fields. I have failed one internship and have been unable to find work in my field as a result of becoming forgetful and dizzy while on the job. This field requires one to be fully engaged physically and there is much to remember with daily tasks and writing. My present job is where there is not as much electropollution and the internships I did succeed in, I had to take medicine and worked extra hard to compensate for my physical sufferings and setbacks.

7. Throughout my illness and sufferings I have read countless studies, websites, and news articles. I have consulted countless professionals and have taken a proactive and preventative approach to my health and physical protection. I have read studies such as *Health Effects of Mobile Phone Transmitter Masts and the Planning Application by Orange plc for a mast in St. Michael's Church, Aberystwyth* by Chris Busby and Roger Coghill where they state "planning authorities should seek to locate mast installations as distant as possible from human habitations" (12). During another study titled *Pooled Analysis of Two Case-control Studies on the Use of Cellular and Cordless Telephones and the Risk of Benign Brain Tumors Diagnosed During 1997-2003* by Lennart Hardell, Michael Carlberg, and Kjell Hansson Mild, they found an increased risk in brain tumors. Another study is titled "*Nerve Cell Damage to Mammalian Brain after Exposure to Microwaves from GSM Mobile Phones*" by Leif Salford, Arne Brun, Jacob Eberhardt, Lars Malmgren, and Bertil Persson. I have been to websites such as www.microwavenews.com, www.bioinitiative.org, www.safewireless.org, www.emrnetwork.org, Swedish Association for the Electrosensitive http://www.feb.se/index_int.htm, www.emrpolicy.org, www.emfacts.com, www.wave-guide.org, and many more. According to my doctor Dr. William Lyden, Exhibit A, "EMF stress due to cell phone use and proximity to cell phone towers is a significant factor if not sole cause" of my health problems.

8. The realization of what was happening to my body has caused me a great deal of emotional stress along with the physical. I've lost friends, faced quarreling amongst family members, lost sleep, work days and productive time for school work and other tasks and more. I have suffered much from worrying, attempting to get residents and officials to understand through letter writing, petitions, passing out literature, facing the counsels, holding meetings, and sharing my concerns for people's health and longevity.

9. Towers keep multiplying, in spite of the protests from local groups. The towers carry multiple cell services and overlapping signals from radio and television. All of this causes concern over the insufficient safety standards that do not manage the exposure over people's houses, schools, and work places.

10. As a result, we are concerned about health effects of long-term continuous exposure to radiofrequency signals.

11. We do not want to be guinea pigs. There are insufficient safety standards and insufficient knowledge about the long-term health effects of these wireless signals.

12. Without strong FCC standards and the enforcement of such standards, we fear the hazards to our family's health as their immune systems become compromised by low level radiation over time.

13. We are concerned about having to live next to antennas and transmitters that service wireless technology. We have a right to be safe in our homes and our schools and workplaces, and we have a right to be protected by current safety standards based on current science and other findings.

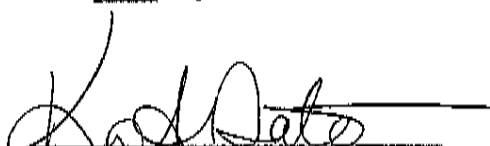
14. We understand that the EMR Policy Institute is preparing comment to submit to the upcoming Federal Communications Commission proceedings, in order to develop a policy for providing high-speed internet service throughout the country - FCC 09-31, A National Broadband Plan for Our Future.

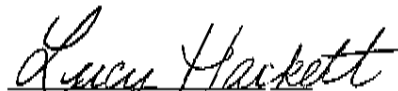
15. The undersigned and all the persons in our household hereby designate The EMR Policy Institute to speak on our behalf at this FCC proceeding for the purpose of defending our rights to be safe in our homes, in our schools, in our workplaces. The FCC's current RF exposure guidelines are inadequate in light of the findings of current science.

16. I ask that the FCC accept this affidavit and the attached exhibits into evidence for consideration under FCC 09-31, A National Broadband Plan for Our Future, as it is material evidence of the existence of signals to which my family and I are subject, yet without proper standards based on current science.

Sworn to before me

This 5 day of June, 2009


Notary Public


Lucy Hackett



KRISTEN A. DATA
Notary Public, State of Ohio
My Commission Expires Oct. 1, 2013

William Lyden, D.C.,
D.A.C.B.N., D.A.B.C.I.



MICHIANA

WELLNESS & LONGEVITY CLINIC

605 W. Edison Rd., Suite G
Mishawaka, IN 46545-8823

Diplomate in Nutrition - Board Certified 1989
Diplomate in Internal Disorders - Board Certified 1990

PHONE: 574-258-4444 FAX: 574-258-4445
Email: MWLC@SBCglobal.net

November 15, 2006

To Whom It May Concern:

The following is a report respectfully submitted with the permission of Ms. Lucy Rzeszutek regarding her ongoing health condition. Due to persistent symptomatology, Ms. Rzeszutek sought care at this office on March 9, 2005. The following report is based on the information I have on file related to her condition.

I conducted a comprehensive consultation (Evaluation and management) on this date with her. In her history she has significant symptoms that are consistent with health effects due to electromagnetic stress. The four major areas of stress that contribute to health conditions are: 1) Structural stress, 2) Biochemical stress, 3) Electromagnetic stress, 4) Emotional stress. Of these the least understood or appreciated is electromagnetic field (EMF) stress. The body normally produces a natural EMF due to the electrochemical processes within cells during metabolism. It is also a well known fact that when electrical fields interact with each other there will be an additive or subtractive effect to the combined field or wave. That is, if the frequencies are in phase with each other they will add together and the resulting wave will be increased to the level of the sum of the amplitudes of the original waves. On the other hand, if the waves are out of phase the resulting wave will be the difference of the amplitudes of the original waves. In the body a similar effect can occur by the interaction of exogenous (external) fields on the endogenous (internal) fields normally produced by cellular processes. This results in a stress on the body.

In my 20 years of clinical experience, I have found that approximately 25% of the patients that I have seen and tested, have EMF stress that interferes with or is a component of their health status and effects their health condition. The problem in proving this is that their symptoms can be caused by more than one stressor, however, their health is determined by their adaptation to their overall stress load. Some patients are the proverbial "canary in a coal mine" and are much more sensitive to such stressors than the general population. Given Ms. Rzeszutek's history of onset and persistency of symptoms that are worsened with intensity or accumulation of exposure to EMF fields, it is my professional opinion that she has 1) EMF sensitivity reaction (ICD9 code 994.8), coupled with 2) Dermatitis due to Fatty Acid Deficiency (692.1) and 3) Dysbiosis, abnormal bowel flora (558.9). Given that fact that Ms. Rzeszutek did not pursue the examination procedures and laboratory testing due to financial concerns, I cannot fully determine or rule out any other potential causes to her symptoms at this point. However, I would include EMF stress due to cell phone use and proximity to cell phone towers as a significant factor if not sole cause of her health problems.

If you have any further questions, please contact me at the address or telephone number above.

Sincerely,


Dr. William Lyden

CHIROPRACTIC PHYSICIAN • APPLIED KINESIOLOGY • NEURO-EMOTIONAL TECHNIQUE (NET)
FIRST LINE THERAPY™ • DETOXIFICATION • WEIGHT MANAGEMENT • MENOPAUSE TYPE™ TESTING
DIGESTIVE, ALLERGY & IMMUNE DISORDERS • HEALTH COACH • VITAMIN COUNSELING

Exhibit A

AFFIDAVIT OF RUTH DANNER

State of Alaska }
 }
City & Borough of Juneau } ss.


Ruth Danner being duly sworn deposes and says:

1. My name is Ruth Danner. I live at 1028 Arctic Circle, Juneau, Alaska.
2. My husband and I have lived in this house for over 20 years.
3. We live in clear view of the Mendenhall Glacier, a natural wonder located in the Tongass National Forest and visited by over a million people each year.
4. On January 13, 2009, AT&T Alascom applied for two permits to install new WiMax towers and antennas in two residential neighborhoods.
5. One is sited within 500 feet of our home, and is a 180' lattice tower without consideration for visual impact.
6. The other is a 150' monopole 25' from the main street about 3 miles away in a church parking lot where childcare is provided daily and across the street from a middle school.
7. The 150' pole permit was granted and the 180' tower was continued due to the a Planning Commission request for further information.
8. Up to four co-locators are proposed to be added to this tower over time and we have no idea who those service providers will be or what they will attach to the tower.
9. A group of us filed an appeal against the granted permit and are waiting, now, for a decision by the City Assembly.
10. We were not allowed, due to Section 704 of FCC TCA of 1996, to argue that public concern over radio frequency emissions should carry any weight in the Commission or the Assembly's decision, but concern over RF emissions was by far the most voiced concern by people we spoke with in our research and information gathering stage of our appeal.
11. The requirement that radio frequency emissions must be in compliance with FCC limits has no teeth -- we were provided nothing in writing to say what the standards were or how these WiMax antennas would perform.

EXHIBIT 30

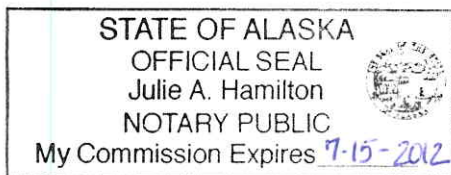
12. The Commission made no attempt to seek ongoing evidence of compliance as the facility ages, equipment is modified, or standards change.
13. The assumption seems to be that the Feds have it under control, but very little evidence in life says that the government has ANYTHING entirely under control.
14. In the absence of conclusive scientific evidence that prolonged exposure to low level RF exposure causes no harm, regulations should err on the side of caution.
15. I understand that the EMR Policy Institute is preparing comment to submit in the current Federal Communications Commission proceeding to develop the policy for providing high-speed internet service throughout the country - FCC 09-31, A National Broadband Plan for Our Future.
16. I have submitted my comments here for their use in presenting their arguments.
17. I ask that the FCC accept this affidavit into evidence for consideration under FCC 09-31, A National Broadband Plan for Our Future.

Sworn to before me


Ruth Danner

This 4 day of June, 2009


Notary Public



FCC 09-31 Broadband Plan for our Future
GN Docket No. 09-51
AFFIDAVIT OF MICHELLE BUBNIS

State of Texas]
]
 County of Travis]

ss.

MICHELLE BUBNIS being duly sworn deposes and says:

1. My name is Michelle Bubnis. I live at 11012 Crossland Dr, Austin, Texas.
2. My husband and I have lived in Austin TX for about 22 years. We live 0.82 miles from a cell phone tower that is operated by STC Five Llc and an antenna that is 0.97 miles away owned by Professional Licensing Consultants. There are 161 antennas and 33 towers within a four mile radius of our home. We live about 20 ft away from a neighbor at 11010 Crossland Dr., Austin TX who uses WiFi in their home.
3. The operation of this closest tower (.82 miles) has given me and my husband concern because it is located over the church we once could attend. I can no longer go to church because of the headaches and pain this tower causes me. I can no longer walk through a park nearby "Trailhead Park" because of the pain caused by this same cell phone tower.
4. The WiFi from my neighbor's house prevents me from using two rooms and a bathroom in my own house. The WiFi penetrates through the walls. The headache/burning sensations shortly following my exposure are not voluntary.
5. I have a condition called electrohypersensitivity caused by a chemical exposure in 2003. I suffer from headaches and burning sensations in the mouth when I am near any type of wireless technology, computers, appliances, power lines etc. Most of the circuit breakers in my house are shut off both day and night. I am now homebound and completely disabled due to this impairment. I rely on my husband and an assistant for my survival.
6. Because of our situation we have had to completely change our lifestyle. We no longer own or use a cell phone. All of our cordless phones have been replaced by land lines. Our home computer and television are located in a room at the end of the house. My husband and I sleep on a bed that is the maximum distance in our bedroom from the WiFi coming in from our neighbor and another cell phone tower located on the other side of the canyon so that I can sleep at night. Our refrigerator has been moved to the garage. Our heating, ventilation and air conditioning system was moved to the far end of the house and EMF mitigation straps were added. A remote on/off switch to the kitchen electrical was installed so I can cook without EMF exposure. We are considering relocating to a part of the country with less radiofrequency radiation because it is becoming impossible to find an electrosmog free area, where I can live without pain.
7. Here is the current impact of wireless technology on our locale as of May 31, 2009:
 - o Exhibit A - 33 Towers within a 4 mile radius of our home (2 pages)
 - o Exhibit B - 161 Antennas within a 4 mile radius of our home (3 pages)

EXHIBIT 31

Here is my medical diagnosis:

- Exhibit C – Toxic Encephalopathy 349.82 associated with chemical and electromagnetic sensitivity per Dr. Jonathan Walker, MD, Board Certified Neurologist

I have read multiple studies to understand this condition of electrohypersensitivity:

- Electrohypersensitivity: State of the Art of a Functional Impairment by Olle Johansson, 2006: Explains the physiology related to electrohypersensitivity and verifies my experience.
- Disturbance of the Immune System by Electromagnetic Fields A potentially underlying cause for cellular damage and tissue repair reduction which could lead to disease and impairment by Olle Johansson, 2009: Explains the detrimental biological effects EMF's have on the body and explains the physiology of electrohypersensitivity. This article explains my symptomology.
- www.bioinitiative.org *The Bioinitiative Report*, 2007: This is a summary of over 2,000 studies by a group of scientists and public health officials supporting a new safety standard for electromagnetic radiation. I have experienced the biological impacts that EMF's have on the body and I know that the safety exposure standards in our country are inadequate. If a person becomes ill as I have, then the standards are not protective enough.
- www.feb.se – Swedish website for the electrohypersensitive ... book of personal experiences of people in Sweden with this illness called "Black on White" available for download. I was able to identify with these stories because many of the experiences sound like mine, verifying my condition.
- www.electromagnetichealth.org – e-book available for download: "Public Health SOS: The Dark side of the Wireless Revolution." This book begins with Section I on electrohypersensitivity, once again recognizing the seriousness of radiation exposure as I can verify.

8. I am concerned that our political entities are not taking this condition of electrohypersensitivity and other health issues related to EMF exposure seriously.

9. I am concerned that political entities are unaware of the long term economic impact if an ever increasing number of people in the United States become ill due to unregulated electromagnetic exposures. This illness is disabling with no known cure. I have been ill for 6 years and the medical cost has been extensive.

10. In my previous line of work as an administrator, I was exposed to high levels of EMFs: Daily use of a two way radio, computer, cell phone, PDA and wireless internet. I was exposed to multiple cell phone towers and high power lines during my commute to and from work. I became sick with electrohypersensitivity because of the synergistic effect between long-term continuous exposures to these electromagnetic fields and chemicals.

11. Because of the number of cell service carriers operating in our area, (see Exhibits A&B) and unregulated WiFi in our neighborhood, we have many overlapping signals and are concerned that there are insufficient safety standards to manage the exposure of our family and the children at an elementary school several blocks away, to these signals.

12. My husband and I do not want to be further "test rats" for the government-sanctioned rollout of new technologies with insufficient safety standards, or without sufficient knowledge about the long-term health effects of these wireless signals. I am living proof of the detrimental health effects of these technologies.

13. My health has been severely compromised because of the lack of FCC Standards based on current research that demonstrates biological effects on the body due to electromagnetic frequencies.

14. My husband and I are concerned about having to live next to antennas and transmitters of wireless technology (see Exhibits A&B). We have a right to be safe in our homes. We have a right to current safety standards based on current science. I have a right to accessibility which is being denied to me by my involuntary exposure to wireless technology in my city and neighborhood. My body reacts to wireless technology (radiation) and I am homebound because wireless technology prevents me from going anywhere. Austin, Texas is canopied in electrosmog. There is no "safe" place for me.

15. My husband and I understand that the EMR Policy Institute is preparing comment to submit in the current Federal Communications Commission proceeding to develop the policy for providing high-speed internet service throughout the country - FCC 09-31, A National Broadband Plan for Our Future.

16. The undersigned and all the persons in our household hereby designate The EMR Policy Institute to speak on our behalf on this FCC proceeding for the purpose of defending our rights to be safe in our own home, in our schools and our workplaces and neighborhoods from the invasion into our home, schools and workplaces of signals that already causes harm to us, because the FCC's current RF exposure guidelines are inadequate in light of the findings of current science.

17. I ask that the FCC accept this affidavit and the attached exhibits into evidence for consideration under FCC 09-31, A National Broadband Plan for Our Future, as it is material evidence of the existence of signals to which my family and I are subject, yet without proper standards based on current science.

Michelle Bubnis
Michelle Bubnis

Sworn to before me

This 2nd day of June, 2009

Jeanine Lehman
Notary Public

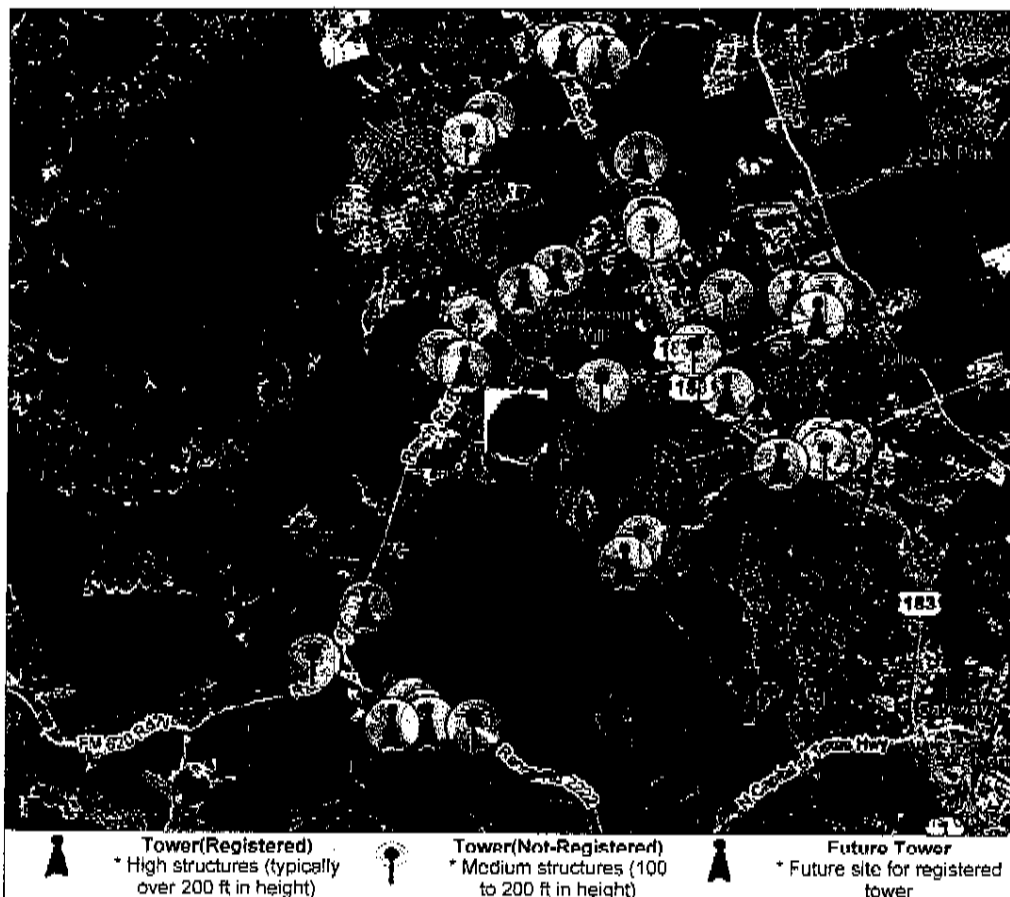


Improve Cell Phone Signal

Amplify Signal Inside Vehicles and Buildings/ Excellent Sales Support
www.myCellularSolutions.com

Ads by Google

• **Tower Structures - (11012 Crossland Dr, Austin, TX 78726)**



Tower Search Results!



Alert! 33 Towers (17 Registered, 16 Not Registered) found within 4.00 miles of 11012 Crossland Dr, Austin, TX 78726.



Info! The NEAREST Tower is .82 miles away and is owned by Stc Five Llc.



Alert! One New Tower Application found within 4.00 miles of 11012 Crossland Dr, Austin, TX 78726.

Tower Type	ID Num	Site Owner	Height	Dist
	(1)	Stc Five Llc	108 feet	.82 miles
	(2)	Crown Castle Gt Company Llc	152 feet	1.36 miles
	(3)	Stc Five Llc	112 feet	1.60 miles
	(4)	T-mobile West Corporation	180 feet	1.93 miles
	(5)	Kundell, Allen R	458 feet	2.48 miles
	(6)	Crown Castle Gt Company Llc	230 feet	2.55 miles
	(7)	Stc Five Llc	115 feet	2.57 miles
	(8)	Texas, State Of Texas Dept. Of Transportation	325 feet	3.04 miles
	(9)	New Cingular Wireless Services, Inc.	86 feet	3.10 miles
	(10)	Crown Communication Inc	260 feet	3.22 miles
	(11)	Austin, City Of	300 feet	3.40 miles
	(12)	Stc Five Llc	114 feet	3.48 miles
	(13)	Crown Communication Inc.	247 feet	3.51 miles

Exhibit A
Pg 1

	(14)	Mobilite Investments II, Llc	120 feet	3.66 miles
	(15)	Crown Castle Gt Company Llc	309 feet	3.79 miles
	(16)	Stc Five Llc	100 feet	3.84 miles
	(17)	Stc Five Llc	115 feet	3.86 miles
Not Registered	(1)	Crown Castle Usa For Sprint	115 feet	1.08 miles
	(2)	T-mobile	135 feet	1.09 miles
	(3)	Cingular Wireless-dallas	127 feet	1.15 miles
	(4)	Crown Castle	189 feet	1.90 miles
	(5)	Mccaw Cellular Communications, Inc.	160 feet	2.19 miles
	(6)	Cingular Wireless-dallas	126 feet	2.48 miles
	(7)	Anderson Mill Municipal Utility	35 feet	2.77 miles
	(8)	Nextel Communications	250 feet	2.95 miles
	(9)	Mccaw Communications	120 feet	3.10 miles
	(10)	At&t Wireless Services	75 feet	3.10 miles
	(11)	Nextel Communications	240 feet	3.12 miles
	(12)	Nextel Communications	250 feet	3.16 miles
	(13)	Cingular Wireless-dallas	157 feet	3.36 miles
	(14)	Crown Communication Inc	247 feet	3.68 miles
	(15)	Gte Mobinet Of Austin Lp	82 feet	3.64 miles
	(16)	American Tower	199 feet	3.83 miles
Future	(1)	City Of Cedar Park Tx	250 feet	3.79 miles

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- Sony Ericsson W350

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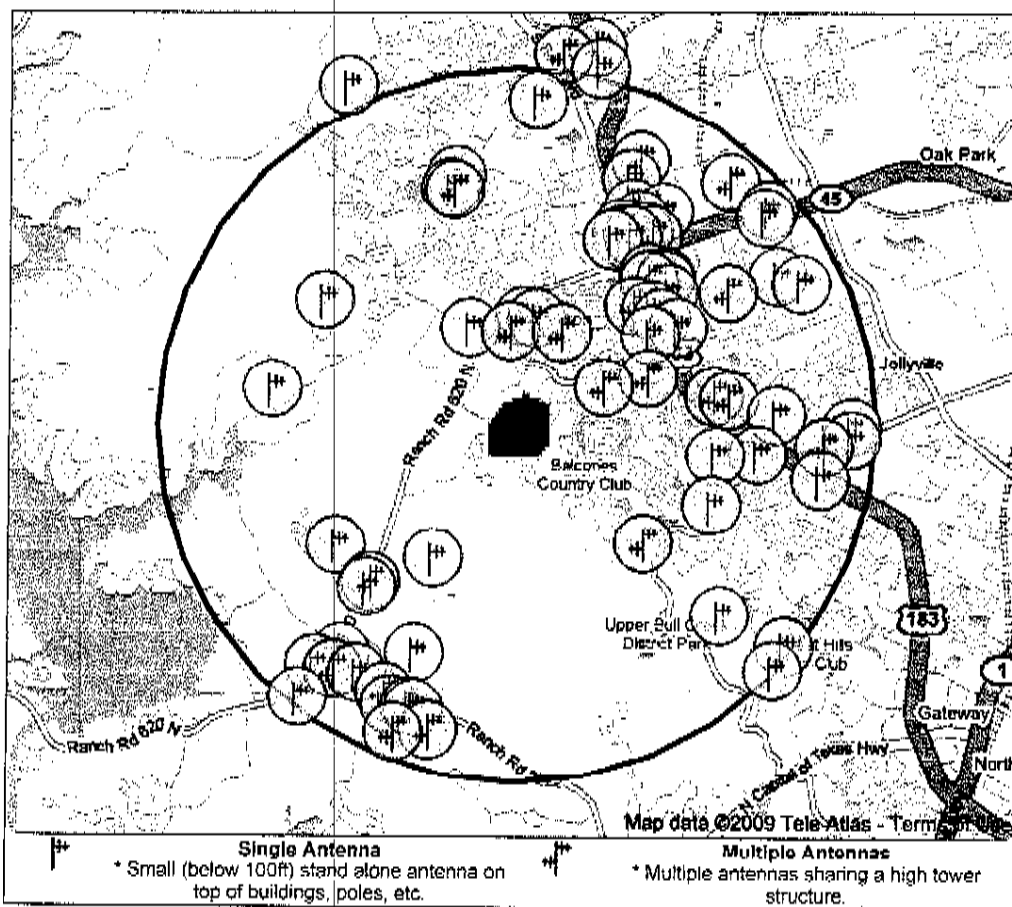
Exhibit A
pg 2

Improve Cell Phone Signal
 Amplify Signal Inside Vehicles and Buildings/ Excellent Sales Support
www.myCellularSolutions.com



Ads by Google

• **Antenna Sites - (11012 Crossland Dr, Austin, TX 78726)**



Antenna Search Results!



Alert! 161 Antennas found within 4.00 miles of 11012 Crossland Dr, Austin, TX 78726.



Info! The NEAREST Antenna is .97 miles away and is owned by Professional Licensing Consultants.

Site Type	Site Num	Antenna Owner	Height	Dist
Multiple	(1)	Fcd 900, Inc.	NA	1.59 miles
		Nextel Of Texas, Inc.	NA	1.59 miles
	(2)	Nextel Of Texas, Inc.	NA	1.90 miles
		Nextel Of Texas, Inc.	NA	1.91 miles
	(3)	Paging Network Of America, Inc.	NA	2.26 miles
		Paging Network Of America, Inc.	NA	2.26 miles
		Paging Network Of America, Inc.	NA	2.26 miles
		Paging Network Of America, Inc.	NA	2.26 miles
		Usa Mobility Wireless, Inc.	NA	2.26 miles
	(4)	Central Texas Regional Mobility Authority (ctrma)	NA	2.44 miles
		Central Texas Regional Mobility Authority	NA	2.44 miles
	(5)	Pagemart II Inc	NA	2.48 miles
		Asap Paging Inc.	NA	2.48 miles
		Metrocell Usa, Inc.	NA	2.48 miles
		Safe Way Rental Equipment Company Inc	NA	2.48 miles
		Kenwood Systems Incorporated	NA	2.48 miles

exhibit B
pg 1

	Asap Paging Inc	NA	2.48 miles
	American Paging Inc	NA	2.48 miles
	Pagemart II Inc	NA	2.48 miles
	Use Mobility Wireless, Inc.	NA	2.48 miles
	Rundell Communications, Inc.	NA	2.49 miles
	American Messaging Services, Ltd	NA	2.48 miles
	Travis, County Of	NA	2.48 miles
	Metrocall Usa, Inc.	NA	2.48 miles
	Mobilemedia Paging, Inc., Debtor-in-possession	NA	2.48 miles
	Mastec North America Inc	NA	2.48 miles
	Electronic Corporate Pages, Inc.	NA	2.48 miles
	Freescale Semiconductor Inc.	NA	2.48 miles
	Electronic Corporate Pages, Inc.	NA	2.48 miles
	Basic Communications	NA	2.48 miles
	Rundell Communications Inc	NA	2.48 miles
	Multi-technology Services Lp	NA	2.48 miles
	Motorola Inc	NA	2.48 miles
(6)	Nextel Of Texas, Inc.	NA	2.48 miles
	Fcl 900, Inc.	NA	2.48 miles
(7)	Central Texas Regional Mobility Authority (ctrma)	NA	2.57 miles
	Central Texas Regional Mobility Authority	NA	2.57 miles
(8)	Nextel Of Texas, Inc. Dba Nextel Communications	NA	3.23 miles
	Nextel Of Texas Inc Dba Nextel Communications	NA	3.24 miles
(9)	Nextel Of Texas Inc Dba Nextel Communications	NA	3.58 miles
	Nextel Of Texas, Inc. Dba Nextel Communications	NA	3.58 miles
(10)	Central Texas Regional Mobility Authority (ctrma)	NA	3.93 miles
	Central Texas Regional Mobility Authority (ctrma)	NA	3.93 miles
	Central Texas Regional Mobility Authority	NA	3.93 miles
	Central Texas Regional Mobility Authority	NA	3.93 miles
(11)	Anderson Mill Municipal Utility District	NA	.97 miles
	Anderson Mill Municipal Utility District	NA	.97 miles
(12)	Anderson Mill Municipal Utility District	NA	1.08 miles
	Anderson Mill Municipal Utility District	NA	1.08 miles
(13)	Anderson Mill Municipal Utility District	NA	1.81 miles
	Anderson Mill Municipal Utility District	NA	1.81 miles
(14)	Anderson Mill Municipal Utility District	NA	2.12 miles
	Anderson Mill Municipal Utility District	NA	2.12 miles
(15)	Archstone-smith Operating Trust	NA	2.32 miles
	Archstone-smith Operating Trust	NA	2.32 miles
(16)	Anderson Mill Municipal Utility District	NA	2.79 miles
	Anderson Mill Municipal Utility District	NA	2.79 miles
(17)	Texas, State Of Texas Dept. Of Transportation	NA	3.04 miles
	Texas, State Of Texas Dept. Of Transportation	NA	3.04 miles
(18)	3m Company	NA	3.09 miles
	3m Company	NA	3.09 miles
	3m Company	NA	3.09 miles
	3m Company	NA	3.09 miles
(19)	E.o. Sharp Butane Co., Inc.	NA	3.27 miles
	E.O Sharp Butane Company	NA	3.27 miles
(20)	Austin, City Of	NA	3.40 miles
	City Of Austin, Texas	NA	3.40 miles
	Austin, City Of	NA	3.40 miles
	Austin, City Of	NA	3.40 miles
	Austin, City Of	NA	3.40 miles
	Austin Energy	NA	3.40 miles
	County Of Travis, Texas	NA	3.40 miles
	City Of Austin, Texas	NA	3.40 miles
	Travis, County Of	NA	3.40 miles
	Austin Energy	NA	3.40 miles
	Travis, County Of	NA	3.40 miles
	Travis, County Of	NA	3.40 miles
	Austin, City Of	NA	3.40 miles
	Travis County Of	NA	3.40 miles
	County Of Travis, Texas	NA	3.40 miles
	Austin Energy	NA	3.40 miles
	Austin, City Of	NA	3.40 miles
	City Of Austin, Texas	NA	3.40 miles
	Travis, County Of	NA	3.40 miles
	City Of Austin, Texas	NA	3.40 miles
	Austin, City Of	NA	3.40 miles
	City Of Austin, Texas	NA	3.40 miles

Exhibit B
pg 2

	County Of Travis, Texas	NA	3.40 miles
	Austin, City Of	NA	3.40 miles
	Travis, County Of	NA	3.40 miles
	Austin, City Of	NA	3.40 miles
	Travis, County Of	NA	3.40 miles
	Travis, County Of	NA	3.40 miles
	Austin, City Of	NA	3.40 miles
	Austin, City Of	NA	3.40 miles
	Austin Water Utility	NA	3.40 miles
	Austin Water Utility	NA	3.40 miles
	County Of Travis, Texas	NA	3.40 miles
	Austin, City Of	NA	3.40 miles
(21)	Skytel Corp.	NA	2.31 miles
	Freescale Semiconductor Inc.	NA	2.31 miles
	Skytel Spectrum Lic	NA	2.31 miles
(22)	Fibertower Network Services Corp.	NA	1.08 miles
	Fibertower Network Services Corp.	NA	1.00 miles
	Fibertower Network Services Corp.	NA	1.08 miles
	Fibertower Network Services Corp.	NA	1.08 miles
(23)	Fibertower Network Services Corp.	NA	2.51 miles
	Fibertower Network Services Corp.	NA	2.51 miles
(24)	Austin Energy	NA	3.48 miles
	Austin Energy	NA	3.48 miles
(25)	Fibertower Network Services Corp.	NA	3.79 miles
	Fibertower Network Services Corp.	NA	3.79 miles
Single	(26)	Nextel Of Texas, Inc.	NA 1.15 miles
	(27)	Texas, State Of Texas Dept. Of Transportation	NA 3.57 miles
	(28)	Texas, State Of Texas Dept. Of Transportation	NA 3.63 miles
	(29)	Cal 900, Inc.	NA 3.73 miles
	(30)	Nextel Of Texas, Inc.	NA 3.87 miles
	(31)	Austin, City Of	NA 1.12 miles
	(32)	Anderson Mill Municipal Utility District	NA 1.13 miles
	(33)	Concordia University Of Austin	NA 1.66 miles
	(34)	Westwood High School	NA 1.79 miles
	(35)	Jollyville Fire Department	NA 1.94 miles
	(36)	Anderson Mill Municipal Utility District	NA 2.00 miles
	(37)	Anderson Mill Municipal Utility District	NA 2.11 miles
	(38)	Toys R Us Inc	NA 2.17 miles
	(39)	Dillards, Inc.	NA 2.18 miles
	(40)	Target Stores T0334	NA 2.21 miles
	(41)	Gap Inc	NA 2.27 miles
	(42)	Jollyville Fire Department	NA 2.29 miles
	(43)	J.M.Zabaneh Enterprises	NA 2.33 miles
	(44)	Joppeney Corp Inc	NA 2.33 miles
	(45)	Lake Line Mall 2324	NA 2.33 miles
	(46)	Home Depot U.s.a., Inc.	NA 2.38 miles
	(47)	Austin, City Of	NA 2.39 miles
	(48)	Sas Institute	NA 2.44 miles
	(49)	Dillards Inc Lakeline Mall	NA 2.52 miles
	(50)	Cedar Park Vfd	NA 2.53 miles
	(51)	Austin, City Of	NA 2.59 miles
	(52)	Twin Creeks Country Club	NA 2.60 miles
	(53)	Austin Community College	NA 2.65 miles
	(54)	Charlotte Russe	NA 2.75 miles
	(55)	Home Depot U.s.a., Inc.	NA 2.82 miles
	(56)	Austin, City Of	NA 2.82 miles
	(57)	Cypress Creek Crossings	NA 2.88 miles
	(58)	Speedread Technologies	NA 3.02 miles
	(59)	Mc Donalds	NA 3.05 miles
	(60)	Austin, City Of	NA 3.08 miles
	(61)	Balkman, Doug	NA 3.10 miles
	(62)	Target Store T1953	NA 3.12 miles
	(63)	Austin, City Of	NA 3.17 miles
	(64)	Twin Creeks Country Club Ltd	NA 3.31 miles
	(65)	Austin, City Of	NA 3.38 miles
	(66)	Austin Community College	NA 3.60 miles
	(67)	Great Hills Golf Club Inc	NA 3.83 miles
	(68)	Focus Interconnect Technology Corp	NA 3.90 miles
	(69)	Leander Independent School District	NA 3.98 miles
	(70)	Metrocall Usa, Inc.	NA 3.10 miles
	(71)	Texas Cellular Telephone Company, L.p.	NA 3.36 miles
	(72)	Bmp Austin License Company, L.p.	NA 3.56 miles
	(73)	City Of Cedar Park	NA 3.73 miles
	(74)	Time Warner Entertainment- Advancenewhouse Partnership	NA 3.90 miles



Neurotherapy Center of Dallas, Inc.

Jonathan E. Walker, M.D.

Neurology

Clinical Neurophysiology

EEG Biofeedback

April 21, 2008

To Whom It May Concern:

I agree with Michelle Bubnis's designated doctor, Dr. Velazquez, that she is 30% impaired, and that maximum medical improvement was reached on 2-19-08. Her diagnosis is toxic encephalopathy, associated with chemical and electromagnetic sensitivity. Her prognosis is uncertain.

Sincerely,

Jonathan E. Walker, M.D.

Board Certified Neurologist

Exhibit C

AFFIDAVIT OF CORINA ZACK

State of Illinois]
]
 County of Cook] ss.

CORINA ZACK being duly sworn deposes and says:

1. My name is Corina Zack. I live at 509 N Prindle Ave., Arlington Heights, Illinois.
2. My family and I live across the street from a church that will place a commercial cellular antenna in its steeple. We have read multiple studies that inform us that this technology is dangerous because of the unknown long term health effects from continuous exposure to radiation.
3. We are concerned about having to live next to antennas and transmitters if wireless internet is built out in our local environment. We have a right to be safe in our homes and our schools and workplaces, and we have a right to proper safety standards based on current science.
4. The undersigned and all the persons in our household hereby designate The EMR Policy Institute to speak on our behalf on this FCC proceeding for the purpose of defending our rights to be safe in our own home, in our schools, our workplaces and neighborhoods from the invasion into our home, schools and workplaces of signals that may cause harm to us, because the FCC's current RF exposure guidelines are inadequate in light of the findings of current science.
5. I ask that the FCC accept this affidavit into evidence for consideration under FCC 09-31, A National Broadband Plan for Our Future, as it is material evidence of the existence of signals to which my family and I are subject, yet without proper standards based on current science.

Sworn to before me


 Corina Zack

This 2 day of June, 2009


 Notary Public

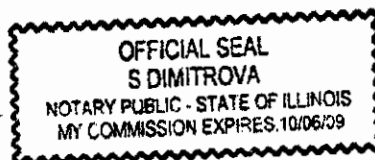


EXHIBIT 32

AFFIDAVIT OF SARAH REILLY

State of California]
]
County of Marin] ss.

Sarah Reilly being duly sworn deposes and says:

1. My name is Sarah Reilly. I live at 14 Deuce Court, Fairfax, California.
2. I am 38 years old. I became electro-hypersensitive when I was 33. I have had burning all over my body for the last 5 years in response to wireless technology (cordless phones, cell phones and cell towers/antennas). It is very painful.
3. In 2002 I moved to the outskirts of Las Vegas to live with my mom – Elizabeth Miles and my Stepdad – Keith Miles. I moved there to recover from a chronic illness of Lyme Disease and Multiple Chemical Sensitivity. I lived at 4624 Ridgford St., Las Vegas, NV.
4. One year later in 2003, six towers had been place around the circumference of my home within a ¼ mile radius. One of the towers, that resembled a palm tree, pointed directly into my large bedroom window. During this time I began having burning all over my body, heart palpitation, blood pressure dropping, especially when I was in my bedroom. However, I did not know why.
5. When my family got wireless internet in the latter part of 2003, my symptoms got even worse. I described the sensation as “fireworks all over my body”.
6. My symptoms got so bad over the course of 2 years that it came to the point that I had to be taken out to the country by my mother so I could reground my body on the ground away from any cell towers. Everyplace was painful for me in the metropolitan area of Las Vegas. I had burning, stabbing pain all over my body, headaches, drop in blood pressure, heart palpitation in response to proximity of cell towers and wireless technology. Additionally, to be near a phone, to hold a phone to my head and to look at a TV screen was painful.
7. In 2005, I was forced to leave my home due to this issue. The burning, stabbing pain, sever headaches, weakness and heart palpitations had gotten worse and I had developed a rare IgE Autoimmune Disorder and I was getting weaker everyday.
8. In 2005 I went to Northern California to camp with my Father and a month later settled Stinson Beach in Marin County where I would live for 1 year very isolated and

EXHIBIT 33

then to Pt. Reyes for 2.5 years recovering from this, painful and isolating condition known as electro-hypersensitivity.

9. I now live in Fairfax, a town in Marin County . My electro-hypersensitivity is still very prominent. I have to avoid libraries, malls, wireless cafes and areas with cell towers/antennas. The burning in my body, the weakness and severe headaches in response to those technologies limits my accessibility to public areas, especially as society becomes more saturated with wireless and cell towers/antennas.

10. During the course of my healing I became a nutritionist. Not only do I understand this issue on a personal physical level, but I have read studies and understand the biological implications on a scientific level. These frequencies are harming biological systems. Over 2,000 studies have now documented this correlation. Scientists are recognizing this internationally. Countries around the world are acknowledging this critical issue.

11. This has been a huge detriment in the course of my young adult life. I lost my previous career, my livelihood, my life savings. There are no doctors well versed in this condition. This has caused immense concern and worrying not only by myself but also of my parents as we know the technology is becoming more and more prevalent and saturating our environment/.

12. In the neighboring vicinity, there are a number of cell service carriers operating in my surrounding area. There are many overlapping signals and I am concerned that there are insufficient safety standards to manage the exposure of myself and others to these signals.

13. As a result, I am concerned about health effects of long-term continuous exposure to one or many signals.

14. I do not want to be a guinea pig for the government-sanctioned rollout of new technologies with insufficient safety standards, or without sufficient knowledge about the long-term health effects of these wireless signals.

15. Without strong FCC standards and the enforcement of such standards, I fear the hazards to my health of this low level radiation over time.

16. I am concerned about having to live in proximity to antennas and transmitters if wireless internet is built out in our local environment. We have a right to be safe in our homes and our schools and workplaces, and we have a right to current safety standards based on current science. We have a right to not be harmed by our environment. We have a right to be justly protected by our Government. We are not protected am at this

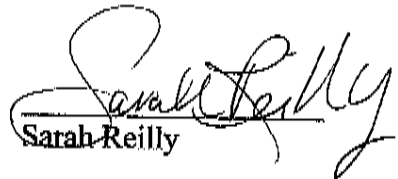
point. I have to live my life in a very restricted fashion because so many public arenas are saturated with wireless or cell antennas.

17. I understand that the EMR Policy Institute is preparing comment to submit in the current Federal Communications Commission proceeding to develop the policy for providing high-speed internet service throughout the country - FCC 09-31, A National Broadband Plan for Our Future.

18. I, Sarah Reilly, the undersigned hereby designate, The EMR Policy Institute to speak on my behalf on this FCC proceeding for the purpose of defending my rights to be safe in my own home, school and workplaces and neighborhoods from the invasion into our home, schools and workplaces of signals that may cause harm to us, because the FCC's current RF exposure guidelines are inadequate in light of the findings of current science.

19. I ask that the FCC accept this affidavit and the attached exhibits into evidence for consideration under FCC 09-31, A National Broadband Plan for Our Future, as it is material evidence of the existence of signals to which I am subject, yet without proper standards based on current science.

Sworn to before me



Sarah Reilly

This 3rd day of June, 2009

Notary Public

CALIFORNIA JURAT WITH AFFIANT STATEMENT

- ☒ See Attached Document (Notary to cross out lines 1-6 below)
☐ See Statement Below (Lines 1-5 to be completed only by document signer[s], *not* Notary)

Signature of Document Signer No. 1

Signature of Document Signer No. 2 (if any)

State of California

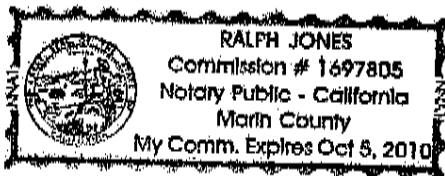
County of MARIN

Subscribed and sworn to (or affirmed) before me on this

3rd day of JUNE, 2009, by

(1) SARAH REILLY
Name of Signer

proved to me on the basis of satisfactory evidence
to be the person who appeared before me (.) (.)



(and)
(2) N/A
Name of Signer

proved to me on the basis of satisfactory evidence
to be the person who appeared before me.)

Signature

Signature of Notary Public

Place Notary Seal Above

OPTIONAL

*Though the information below is not required by law, it may prove
valuable to persons relying on the document and could prevent
fraudulent removal and reattachment of this form to another document.*

Further Description of Any Attached Document

Title or Type of Document: AFFIDAVIT

Document Date: 6/3/09 Number of Pages: 3

Signer(s) Other Than Named Above: N/A

RIGHT THUMBPRINT
OF SIGNER #1
Top of thumb here

RIGHT THUMBPRINT
OF SIGNER #2
Top of thumb here

Affidavit of Marcia L. Finney
State of Texas
County of Collin

Marcia Finney being duly sworn deposes and says:

1. My name is Marcia Finney. I live at: 2316 KITTYHAWK Dr. Plano, Texas 75025.
2. I have lived at this address for 1 1/2 years. My wife Antwan (Matahala) have had installed throughout Plano on our street lights. There is an antenna less than 300 feet from my house.
3. This antenna is of concern to me because I have experienced atrial fibrillation, muscle pain and weakness since its installation. I have similar complications from cell phones, and Virgin Fios T.V.
4. The whole city of Plano is being wife'd which means I am restricted in where I can go and how long I can stay somewhere. I am now exposed to EMF 24/7.
5. I am electromagnetically sensitive and unable to use a computer, cell phone or watch T.V. I previously had Virgin Fios T.V. which gave me symptoms of atrial fibrillation, muscle pain & weakness. (This statement attached.)
6. My medical problems are aggravated by wireless technology and I live in constant fear.
7. I have had numerous studies regarding the dangers of wifi, i.e. EMF, but mostly my personal experience have taught me its danger.

EXHIBIT 34

Mallory T. T. T.

-2-


8. A nationwide Wi Max system would destroy me!
There would be no way to escape as the radiation is constant, 24/7 and absorbed by the human body and permeates man-made structures.
9. Because of all the cell phone towers in our community and wife at business and presidential addresses, I believe that current safety standards do not protect me.
10. I am concerned about both the short and long-term health effects of continuous exposure to many signals.
11. I do not want to be a guinea pig for a government-sanctioned pull out of new technologies that do not have valid safety standards, and without knowledge of health consequences.
12. Without strong FCC standards and the enforcement of such standards, I fear both immediate and long term consequences to my health.
13. I have the right to be safe in my home and my community. I would not be safe if wireless antennas and transmitters are in my local environment.
14. I understand that the EHR Policy Institute is preparing comment to submit in the current Federal Communication Commission proceedings to develop the policy for providing high speed internet service throughout the country. FCC 09-31; A National Broadband Plan for Our Future.
15. I hereby designate the EHR Policy Institute to speak out on my behalf on this FCC proceeding for the purpose of defending my right to be safe in my home, schools, work places and neighborhoods.


-3- Marcia Frumberg

from the issuance of signals that per se have been
because the FCC's current RF exposure guidelines
are inadequate in light of the findings of current
science.

- 16 I ask that the FCC accept this affidavit and
my attached physician's letter into evidence under
FCC 09-31, A National Broadband Plan for Our
Future, as it is material evidence of the signals
to which I am exposed without proper standards
based on current science.

Sworn to before me
This 30th day of May, 2009


Notary Public


MARCIA FRUMBERG.





February 26, 2009

RE: Marcia Frumberg

To Whom It May Concern:

The above patient is under my care and has reported to me that she is experiencing difficulty with her Fios reception system. She tested the electro magnetic frequency of the unit with a field meter and has found out that the unit pulsates. This has resulted in significant health effects for Ms. Frumberg causing episodes of Atrial Fibrillation.

I am asking that you release Ms. Frumberg from any contract and pick up your unit as soon as possible.

If you have any questions regarding this please contact me.

Sincerely Yours,

A handwritten signature in black ink, appearing to read "Alfred R. Johnson".

Alfred R. Johnson, D.O.
ARJ/smm



May 7, 2009

Pat Evans
Mayor

Jean Callison
Mayor Pro Tem

Harry LaRosilliere
Deputy Mayor Pro Tem

Pat Miner
Place 1

Scott Johnson
Place 2

Mabrie Jackson
Place 3

Sally Magnuson
Place 4

Lee Dunlap
Place 8

Thomas H. Muehlenbeck
City Manager

Ms. Marcia Frumberg
2316 Kittyhawk Drive
Plano, TX 75025

Re: Wireless Technology Concerns

Dear Ms. Frumberg,

Your correspondence to our City Manager, Tom Muehlenbeck, has been forwarded to my office for review and response. In consulting with our Technology Services Department we have reviewed your concerns and the material you forwarded to our office. Unfortunately there is nothing we can do to adequately address your concerns related to the City of Plano's use of wireless technology. This technology is a critical tool for our public safety services and our other related city services.

These types of devices are becoming more common in Plano as Verizon's FIOS and Time Warner's high speed Internet services are expanding. Most of the homes with these high speed Internet services are equipped with a wireless router that emits WiFi signals. These devices typically broadcast for a range of 150 feet indoors and 300 feet outdoors. The mesh devices we are deploying typically broadcast for a range of 1000 feet outdoors. The frequencies for both the wireless routers and the mesh devices are similar, both in the 2.4GHz unlicensed frequency.

When our staff drove around your neighborhood they detected no less than 25 WiFi devices emitting signals in that neighborhood. Expansion of WiFi in our community will continue as this technology advances as a mode of communication, not only for cities and commercial application, but residential use too.

Sincerely,

Bruce D. Glasscock
Deputy City Manager

c: Mayor Evans & City Council
Tom Muehlenbeck, City Manager
Mark Israelson, Assistant City Manager
David Stephens, Technology Services Director

Affidavit of Kimberly Ordogne

State of Texas } ss.
Collin County }

Kimberly Ordogne being duly sworn deposes
and says:

1. My name is Kimberly Ordogne. My home is at 8432 Finisbury Drive, Plano, Texas.

2. I can not live in my home because the city of Plano installed ~~an~~ a wireless communications antenna near my home.

3. I purchased my home in December of 2007 and have been in the process of renovating it to accomodate my health needs. I suffer from Chronic Fatigue Syndrome, Multiple Chemical Sensitivity, and Electromagnetic Sensitivity.

4. The communications antenna was installed recently. Because of the antenna, I cannot be in my home without triggering adverse symptoms. I get headaches, nausea, and dizziness.

EXHIBIT
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5. I also get sick from sitting in traffic next to a traffic signals in Plano and also while patronizing businesses where wi-fi technology is installed.

-2-

6. My freedom to be out and about in Plano has been drastically curtailed.
7. I am also very concerned about the proposed wi-fi broadband for our country. If this goes through, it will add even more radiofrequency microwave radiation to our country.
8. I am very concerned about health effects or of long-term continuous exposure to all this radiation. I have read scientific studies that cite the harmful effects of the type of radiation that is transmitted from wireless technology.
9. I do not want to be a guinea pig for the government-sanctioned rollout of new technologies with insufficient safety standards, or without sufficient knowledge about the long-term health effects of these wireless signals.
10. I have a right to be safe in my home and going out and about in the community where I live, and I have a right to current safety standards based on current science.
11. I understand that the EMR Policy Institute is preparing comment to submit in the current Federal

-3-

Communications Commission proceeding to develop the policy for providing high-speed internet service throughout the country - FCC 09-31, A National Broadband Plan for Our Future.

12. The undersigned designates The EMR Policy Institute to speak on our behalf on this FCC proceeding for the purpose of defending my right to be safe in my own home, and neighborhood from the invasion into my home and community of signals that may cause harm to me because the FCC's current RF exposure guidelines are inadequate in light of the findings of current science.

13. I ask that the FCC accept this affidavit into evidence for consideration under FCC 09-31, A National Broadband Plan for Our Future, as it is material evidence of the existence of signals to which I am subject, yet without proper standards based on current science.

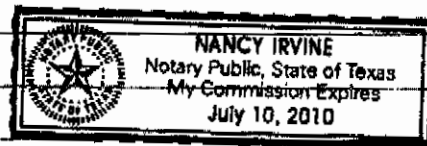
Kimberly Ordogne

Sworn to before me

Kimberly Ordogne

This ^{May} 29 day of ~~January~~ 2009

Nancy Irvine
Notary Public



CONTROL THE ENVIRONMENT



ISOLATE THE INCITANT

Environmental Health Center — Dallas

8345 Walnut Hill Lane - Suite 220, Dallas, Texas 75231 • Telephone: (214) 368-4132 — Facsimile: (214) 691-8432
Website: www.ehcd.com E-mail: inform@ehcd.com

William J. Rea, M.D.
F.A.C.S., F.A.A.E.M.,
F.A.C.N., F.A.C.P.M.,
F.A.C.A., F.R.S.M.

Board Certified in
Thoracic and Cardiovascular Surgery
Abdominal and General Surgery
Environmental Medicine

Wm. Marcus Spurlock, M.D.
F.A.A.F.P.
Board Certified in Family Practice

Katherine S. Henry, M.D.
F.A.A.F.P.
Environmental
Medicine

Bertie Griffiths, Ph.D.
Immunology
Microbiology

Ervin J. Fenyves, Ph.D.
Environmental Science

Ron Overberg, Ph.D., C.C.N., R.D.
Nutrition

Carolyn Gorman, M.A.
Patient Education

January 7, 2009

To Whom It May Concern:

Re: Kimberly Ordogne

Kimberly Ordogne, who is currently living at Marcia Frumberg's house, is unable to tolerate watching television with wireless reception technology as provided by your company. She suffers from Electromagnetic Frequency sensitivity as a result from environmental illness. Watching television with wireless technology gives her painful headaches, where as she is able to tolerate satellite reception through a cable. She requests that you allow Marcia Frumberg to be released from her contract with Verizon so she may get television reception through a company who can provide a more suitable means for her medical condition.

Your anticipated cooperation in this matter is greatly appreciated.

Sincerely,

William J. Rea, M.D.

WJR/tp/tmf



May 7, 2009

Pat Evans
Mayor

Jean Callison
Mayor Pro Tem

Harry LeRosiliere
Deputy Mayor Pro Tem

Pat Miner
Place 1

Scott Johnson
Place 2

Mabrie Jackson
Place 3

Sally Magnuson
Place 4

Lee Dunlap
Place 5

Thomas H. Muehlenbeck
City Manager

Ms. Kim Ordogne
8432 Finsbury Drive
Plano, TX 75025

Re: Wireless Technology Concerns

Dear Ms. Ordogne,

Your correspondence to our City Manager, Tom Muehlenbeck, has been forwarded to my office for review and response. In consulting with our Technology Services Department we have reviewed your concerns and the material you forwarded to our office. Unfortunately there is nothing we can do to adequately address your concerns related to the City of Plano's use of wireless technology. This technology is a critical tool for our public safety services and our other related city services.

These types of devices are becoming more common in Plano as Verizon's FIOS and Time Warner's high speed Internet services are expanding. Most of the homes with these high speed Internet services are equipped with a wireless router that emits WiFi signals. These devices typically broadcast for a range of 150 feet indoors and 300 feet outdoors. The mesh devices we are deploying typically broadcast for a range of 1000 feet outdoors. The frequencies for both the wireless routers and the mesh devices are similar, both in the 2.4GHz unlicensed frequency.

When our staff drove around your neighborhood they detected no less than 12 WiFi devices emitting signals in that neighborhood. Expansion of WiFi in our community will continue as this technology advances as a mode of communication, not only for cities and commercial application, but residential use too.

Sincerely,

Bruce D. Glasscock
Deputy City Manager

c: Mayor Evans & City Council
Tom Muehlenbeck, City Manager
Mark Israelson, Assistant City Manager
David Stephens, Technology Services Director

AFFIDAVIT OF ELIZABETH FEUDALE

State of Pennsylvania]
County of Lehigh] ss.

ELIZABETH FEUDALE being duly sworn deposes and says:

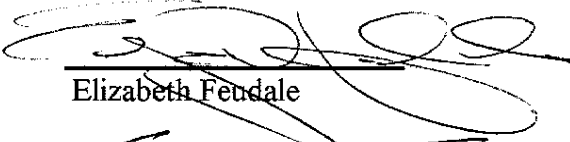
1. My name is Elizabeth Feudale. I live at 1531 N. 19th Street, Allentown, Pennsylvania.
2. My husband (Craig Bowes) has lived at this address for three years and I (Elizabeth Feudale) have lived here for two years. We live approximately one quarter mile from one cell phone tower located just east of the 15th street exit of Rte. 22 in Allentown, PA, and approximately one mile from another cell phone tower that stands in a cemetery located at 2735 Walbert Ave., Allentown, PA. To our knowledge, both were installed prior to our purchase of the property.
3. In light of recent published information regarding known and suspected effects of wireless technology on human health, the location and operation of these towers has caused me and my family great concern due to the fact that over the past 20 years I have suffered from severe allergies, immune system dysfunction, migraines, inflammatory disease, chemical sensitivities and have of late developed electromagnetic field sensitivities.
4. Because of my electromagnetic sensitivities, my husband cannot use his cell phone in our home and also does not operate the computer, fax machine, television or radio while I am there.
5. When exposed to signals emanating from the various wireless systems that we encounter on a daily basis, my symptoms can be mild to life-threatening including, but not limited to the following: heart palpitations, difficulty breathing, vertigo, severe migraine, stomach distress, fainting and seizure and I know without a doubt that the inability to escape these signals as in the proposed blanketing of cities and towns with the new WiMax technology will result in an immediate worsening of my already compromised health and ultimately result in my death.
6. Because of these reactions to wireless signals, we know that the current scientific studies being quoted and held up as a green light to implement this broadband service are seriously inadequate and most assuredly biased in order to pull the wool over the eyes of the general public.
7. I do not wish for me, my family or friends to be experimented on by new technologies that have been government sanctioned with insufficient safety standards, and without medically and scientifically proven knowledge about the long term health effects of these wireless technologies.
8. At this moment our home is my only safe haven where I can protect myself from other people's "air pollution." and I demand the right for me and my husband to be safe in our home with the assurance that the current safety standards be brought up to snuff with unbiased studies performed by independent scientists with no ties to the wireless industry.

EXHIBIT 36

9. I understand that the EMR Policy Institute is preparing comment to submit in the current Federal Communications Commission proceeding to develop the policy for providing high-speed internet services throughout the country - FCC 09-31, A National Broadband Plan for Our Future.

10. The undersigned hereby designate the EMR Policy Institute to speak out on our behalf on this FCC proceeding for the purpose of defending our rights to be safe in our own home, in our schools and our workplaces and neighborhoods and to be protected from the invasion into our home of signals that may cause harm to us because the FCC's current RF exposure guidelines are inadequate in light of the current scientific findings.


11. I ask that the FCC accept this affidavit into evidence for consideration under FCC 09-31, A National Broadband Plan for Our Future, as it is material evidence of the existence of signals to which my family and I are subject, yet without proper standards based on current science.


Elizabeth Feudale


Craig Bowes

Sworn before me

This 3 day of June, 2009


Notary Public



AFFIDAVIT OF VERONICA OLSON

State of Texas }
County of Collin } ss.

VERONICA OLSON being duly sworn deposes and says:

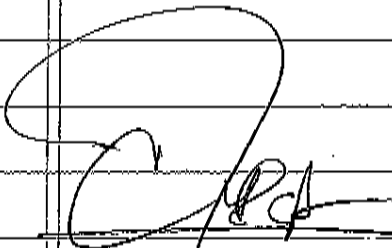
1. My name is Veronica Olson. I live at 9413 Katrina Path in Plano, Texas with my 2 children.
2. In April/May 2009, Plano installed and activated Wi-Fi technology that is blanketing the entire city.
3. As a result, we are continuously being exposed to microwave radiation involuntarily 24 hours a day / 7 days a week.
4. My children and I have lost our ability to limit/reduce our exposure to radiation given off by these wireless technologies that pose serious health hazards, especially to young people and immune-compromised individuals.

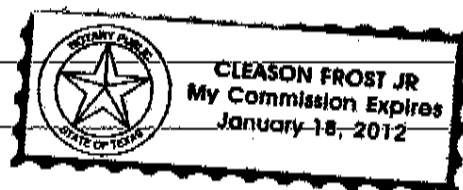
5. Current FCC regulations concerning human exposure to radio frequency radiation are inadequate and long out of date, based on research conducted before 1986.
6. The FCC needs to review and update these regulations to reflect current science, especially health effects from Wi-Fi.
7. I ask the FCC to accept this affidavit for consideration under

Sworn to me before Veronica J. Olson

This ___ day of June, 2009 VERONICA OLSON

6/5/09


Notary Public



AFFIDAVIT OF HOWARD HILLMAN, JR

State of Texas }

County of Collin }

ss.

HOWARD HILLMAN, JR. being duly sworn deposes and says:

1. My name is Howard Hillman Jr. I live at 5033 Silver Lake Drive, Plano, Texas. This house in Plano is currently undergoing renovations. NI-FI was installed throughout Plano and activated in April / May 2009.
2. The operation of these NI-FI towers / boxes is of great concern to me because of the adverse health effects on all people, especially children and immune-compromised individuals. Due to this installation, I must seriously consider selling my home and relocating to a safer region.
3. We are involuntarily being continuously exposed to microwave radiation because of this universal wireless technology that blankets our whole city.

EXHIBIT 38

4. Current FCC regulations regarding radio frequency exposure to humans are based on research conducted before 1986 and are extremely inadequate. These federal regulations need to be revised and updated to reflect current science.
5. I ask that the FCC accept this affidavit and ~~the attached exhibits~~ for consideration under

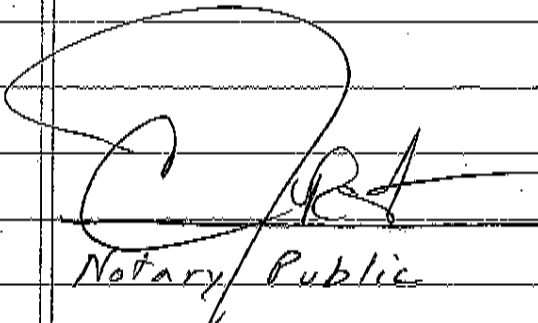
Sworn to me before

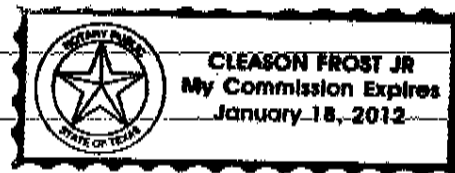
Howard Hillsman Jr

This ___ day of June, 2009

Howard Hillsman, Jr

6-05-09


Notary Public



AFFIDAVIT OF ANGELA FLYNN

State of Maryland

ss.

County of Montgomery

ANGELA FLYNN being duly sworn deposes and says:

1. My name is Angela Flynn. I live at 5309 Iroquois Road, Bethesda, Maryland.

2. From April 11, 2007 through April 28, 2007 I attended a training at a site with multiple cellular antennas on the buildings located at 900 High Street, Santa Cruz, California. One set of antennas is located on the fellowship hall roof and is approximately 60 feet from and at the same level as the site of my training. The other set is located in the church sanctuary's upper wall and is approximately 200 feet from and at the same level as the site of my training. I attended this training two times a week, on Wednesdays from 5:30 - 8:30 pm and on Saturdays from 10:00 am to 5:00 pm. The antennas are operated by Metro PCS and Cingular Wireless. One set has been in operation at this site since, at least, 2004 and the other set has been in operation since 2006.

3. In May 2006, prior to the installation of the second set of antennas, radiofrequency radiation measurements were taken at the neighboring Westlake Elementary School, which is approximately 1,000 feet from the antennas. The highest measurement of 2.8 microwatts/cm² was found in front of the school library. The measurement in the classroom where my training occurred was .0112 microwatts/cm².

4. The operation of these antennas caused me numerous physical symptoms, including, a whole body muscle ache and creaky joints.

5. On April 28, 2007, I went for a walk during my lunch break at approximately 12:15 pm. My walk took me under the high power lines on the hillside above 900 High Street. I walked under these lines for approximately 1,000 feet. When back in the classroom I realized that I had no short-term memory as my mind was completely blank when a questions were asked during the remainder of the class. I then realized that I was mentally confused when I participated in a physical activity and could not fathom what I was supposed to be doing. Subsequently I did not sleep for the next 96 hours.

6. Concurrently, to the exposure defined in items 2, 3, 4, and 5, from March 2007 through December 2008 I lived in Santa Cruz, California at 204 Gault Street. My one

EXHIBIT 39

level house was approximately 300 feet from cellular antennas located at 1240 Soquel Avenue on a two-story building. According to Santa Cruz City Planning Department records one of the three panel antennas at the site was oriented directly towards my home. The antennas are operated by T Mobile and have been operated at this site since 1998.

7. In June 2008 radiofrequency radiation measurements were taken at my home. The radiofrequency radiation measurement in my bedroom was .025 microwatts/cm². The radiofrequency radiation measurement on my front porch was .053 microwatts/cm².

8. The operation of these antennas caused me numerous physical symptoms including: an inability to sleep more than 4 hours a night; memory loss and an inability to spell common words; a whole body muscle ache; creaky joints; irritability; and, hypersensitivity to other forms of radiofrequency radiation such as from WiFi, DECT and cell phones and other cellular antennas.

9. After 21 months of living near to these cellular antennas I moved to my current residence where the closest cellular antenna is approximately 1,000 feet away and there are hills and trees located between the antennas and my home. I now sleep a full eight hours a night and most of my other symptoms have subsided as well. However I do still have a heightened sensitivity to radiofrequency radiation, which worsens as my radiofrequency radiation exposure increases.

10. I have researched the issue of radiofrequency radiation and the non-thermal biological effects from exposure to it extensively over the last three years. From this research it has become apparent that the U.S. governmental agencies, which regulate the safety of exposure to radiofrequency radiation are not protecting the people and other living beings residing in the United States.

Please see the websites referred to below for more on the current science:

www.emrpolicy.org
www.bioinitiative.org
www.hese-project.org
www.electrosensitivity.org
www.kompetenzinitiative.de

and these studies:

1. Public health implications of wireless technologies
Pathophysiology, In Press, Corrected Proof, Available online 14 March 2009

Cindy Sage, David O. Carpenter

2. Health risks of cell phone technology

Surgical Neurology, In Press, Corrected Proof, Available online 29 March 2009
Vini G. Khurana, Charles Teo, Richard G. Bittar

3. Late Lessons from Early Warnings: Towards realism and precaution with EMF?
Publication year: 2009

Source: Pathophysiology, In Press, Corrected Proof, Available online 21 May 2009
David Gee

4. Disturbance of the immune system by electromagnetic fields—A potentially
underlying cause for cellular damage and tissue repair reduction which could lead
to disease and impairment

Publication year: 2009

Source: Pathophysiology, In Press, Corrected Proof, Available online 23 April 2009
Olle Johansson

11. Due to my heightened sensitivity to radiofrequency radiation my ability to find a home and employment has been greatly infringed upon. I also find that I have a lack of confidence in the governmental agencies and their ability and desire to adequately protect me, and others, from harm.

12. I do not consent to the government-sanctioned rollout of new technologies with insufficient safety standards and the apparent lack of knowledge of the current science on this matter.

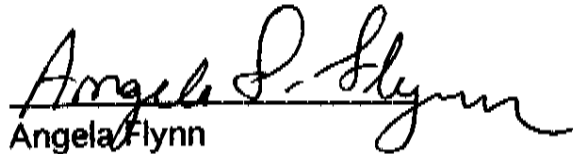
13. Without adequate FCC standards based on the non-thermal biological effects from radiofrequency radiation and the enforcement of such standards, the hazards to my and my family's health will be adversely impacted by this low level radiation over time.

14. I will not be able to live, work, attend school or in anyway be next to antennas and transmitters if wireless broadband internet is built out in my local environment. I have a right to be safe in my home, schools and workplaces, and I have a right to current safety standards based on current science.

15. I understand that the EMR Policy Institute is preparing comment to submit in the current Federal Communications Commission proceeding to develop the policy for providing high-speed internet service throughout the country - FCC 09-31, A National Broadband Plan for Our Future.

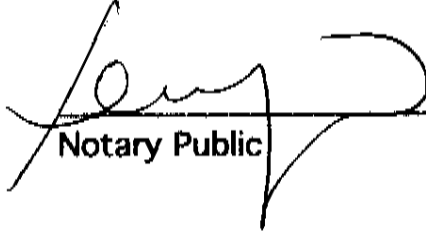
16. The undersigned hereby designates The EMR Policy Institute to speak on my behalf on this FCC proceeding for the purpose of defending my right to be safe in my own home, schools, workplaces and neighborhoods from the non consensual invasion of radiofrequency radiation signals that have and may cause harm to me, as the FCC's current radiofrequency radiation exposure guidelines are inadequate in light of the findings of current science.

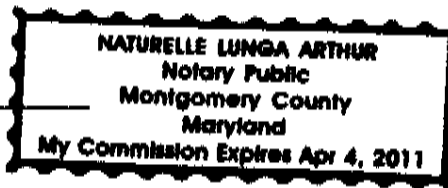
17. I ask that the FCC accept this affidavit into evidence for consideration under FCC 09-31, A National Broadband Plan for Our Future, as it is material evidence of the existence of signals to which I am subject, yet without proper standards based on current science.


Angela Flynn

Sworn to before me

This 2nd day of June, 2009


Notary Public



AFFIDAVIT OF KYRIE LIZIK
GN Docket No. 09-51

June 3, 2009

I am very concerned at the prospect of increasing the amount of electromagnetic frequencies we as citizens will potentially be exposed to in the plans to implement nationwide broadband. There are enough studies that show health effects as a result of exposure to a variety of frequencies. EMF (electromagnetic frequencies) in some forms are health hazards which disrupt internal cellular functioning. It is not prudent to expose any people to new sources of EMF. It has already been said that our standards do not reflect chronic exposure but are based on short burst frequency studies. I absolutely would not want to live near a wireless tower or base station or expose anyone else to this type of hazard. I am electrosensitive, and had a terrible time trying to live with the imposed Smart Meter which has been placed on my home by the power company. I have headaches, dizziness, and other unpleasant sensations in certain electro-magnetic fields, and cannot attend the public library in town because of the wireless signal in there. In the efforts to implement this broadband, it must not expose citizens to more radiofrequency. Not enough studies have been done to show the interference patterns caused by all of the overlapping frequencies that are already out there. Broadband must be kept safe. We should not be forced to be exposed to harmful EMF.

Sincerely,


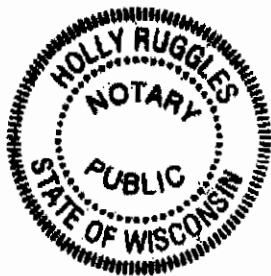

Kyrie Lizik

EXHIBIT 40



Subscribed and sworn before me by the above signed Kyrie Lizik
on the 4 Day of June, 2009
Holly Ruggles
Notary Public Washington County, WI (st.)
My commission expires 12-19-2010

Affidavit of Elizabeth Barris

State of California

County of Los Angeles

Elizabeth Barris being duly sworn deposes and says:

My name is Elizabeth Barris. I live at 3124 Broadway Apt. B Santa Monica, CA 90404

I live with approximately 1,000 cell towers, transmitters and antennas within a 3 mile radius of my apartment.

I recently had an MRI because I used a cell phone for a number of years. I am now "electro sensitive" and cannot pass through highly charged areas (such as the 3rd Street Promenade, a popular shopping area where I live) without feeling a painful reaction to the amount of EMR that permeates that particular area.

I also feel this pain in certain areas of airports when I travel and in other highly charged EMR environments. The fact that I have become electro sensitive is something which I have been able to live with, although I can no longer use a cell phone and must quickly move away from areas where I feel the EMR current in the air. But the extra proliferation of yet more EMR towers, transmitters and antennas is something which will exacerbate my health issue.

Although I'm not sure what The National Broadband Plan is, I can only imagine it consists of more EMR transmissions and possibly more antennas or more power being driven from the antennas or towers. People's health and are 100% ignored by the arrogance of this industry's technological advancement and financial gain trumping human and environmental health when it comes to this technology. It is bad enough that The Telecom Act exists not allowing human or environmental health to be considered for blocking cell towers. The National Broadband Plan I imagine will add insult to this injury. I should not have to be continually and involuntarily exposed to this radiation. It is physically offensive and makes me angry that people can't even go to court if their child gets leukemia from being exposed to WIFI in school all day because it is all within the FCC's regulations who ultimately relied upon industry to tell them what the safe levels of radiation were, not to mention their regulation are based on heating, an obsolete theory when it comes to health effects and non ionizing radiation. It is disgraceful and shameful. I personally promise to do everything in my power to put a stop to this health hazard that has been perpetrated upon the American people and actually the world. Your problems will mount if you continue to roll out more WIFI and electro smog. Just because the US currently lives in a bubble about the health effects of this technology, doesn't mean that won't all change soon...and people will be angry when they are informed of the reality that this technology is biologically harmful to them and their children. And some of them will also unfortunately be sick.

Elizabeth Barris

County of Los Angeles
Subscribed and sworn to before me on
the 3/3/09 day of March, 2009
by Elizabeth Barris
I, Notary Public, do hereby certify that the
person(s) who appeared before me, I certify under PENALTY OF
PERJURY under the laws of the State of California that the
foregoing paragraph is true and correct.
WITNESS my hand and official seal.
Notary's Signature
Seal



EXHIBIT
41

AFFIDAVIT OF JEANMARIE AVOLA

State of Massachusetts]

ss.

Middlesex County]

JEANMARIE AVOLA being duly sworn deposes and says:

1. My name is Jeanmarie Avola. I live at 17 Rustic Road, Stoneham, Massachusetts.
2. I have lived in Stoneham, Massachusetts for almost 38 years. Over the course of the past several years, I have watched the rights of citizens in my community be tested and compromised by the wireless industry's efforts to expand their business plan. I am deeply concerned by the lack of rights we, as citizens, have regarding wireless bylaws and the placement of antennas and towers near our homes, schools, workplaces, etc.
3. My husband and I have four children; all of whom receive exposure to wireless technology at a level far greater than we are comfortable. Our two middle-school aged sons attend the Stoneham Middle School on Central Street in Stoneham, Massachusetts. Unfortunately, their school lies within our town's wireless overlay district. There are antennas within approximately 700 feet of their school in the church steeple at St. Patrick Parish on Central Street. Our two elementary school aged children attend Colonial Park School on Avalon Road in Stoneham. There is a tower located on DCR property within clear view of their school.
4. I have read studies and articles that lead me to believe this technology is dangerous. Although there are many credible experts here in the U.S. raising concerns about the safety of wireless technology, the majority of the research I have come across seems to come from European countries and Canada. I am concerned about allegations that the industry uses its power to prevent and halt studies here in the U.S. Worldwide concerns have led to important research and even bans/limits placed on this technology abroad. European nations are far ahead of us in acting to protect the rights of citizens rather than the rights of the industry. Information and research from abroad appears to be more widespread and accessible here in the United States than research we conduct within our own country; on behalf of our own citizens. This is another disconcerting fact. Please refer to exhibits 1-6 (attached).
5. I am proud of my country. I am proud to be an American citizen. As I examine the motives of the wireless industry as compared with the rights citizens should be able to expect the FCC to protect regarding their health and well-being, however, I am discouraged. As I come to understand the Telecommunications Act of 1995, I am troubled by the amount of input the wireless industry was allowed to have in creating the laws that govern its own practices. I am further disillusioned by the fact that the rights of

EXHIBIT 42

citizens are overshadowed by the financial and business interests of the wireless industry. I urge this committee to learn from the history of prior industries (such as tobacco), where public policy took far too long to catch up to the pressures and the powers of big business. I look to the FCC and to this committee to set standards of safety that protect Americans first. I have faith that due diligence will be done on the part of the FCC, and the industry will no longer be permitted to create the laws that govern it—and benefit its “bottom line.” I respectfully request that the FCC make protecting the health and well-being of American citizens its first priority.

6. Because of my concerns, I do not allow my children to own cell phones. I also limit their use of friends’ phones to emergency calls only.

7. Because of the number of cell service carriers operating in our area, we have many overlapping signals. I am concerned that there are insufficient safety standards to manage the exposure of our family to these signals. I fear that further, rapid proliferation of this technology stands to drastically worsen our exposure.

8. I am concerned about health effects of long-term, continuous exposure to one or many signals.

9. I do not want my family to be guinea pigs for the government-sanctioned rollout of new technologies with insufficient safety standards, or without sufficient knowledge about the long-term health effects of these wireless signals.

10. Without strong FCC standards and the enforcement of such standards, I fear the hazards to my family's health of this low level radiation over time.

11. I am concerned about having to live near antennas and transmitters if wireless internet is built out in my local environment. We have a right to be safe in our homes and our schools and workplaces, and we have a right to current safety standards based on current science.

12. I understand that the EMR Policy Institute is preparing comment to submit in the current Federal Communications Commission proceeding to develop the policy for providing high-speed internet service throughout the country - FCC 09-31, A National Broadband Plan for Our Future.

13. I, the undersigned, and all the persons in my household hereby designate The EMR Policy Institute to speak on our behalf on this FCC proceeding for the purpose of defending our rights to be safe in our own home, in our schools and our workplaces and neighborhoods from the invasion into our home, schools and workplaces of signals that may cause harm to us, because the FCC's current RF exposure guidelines are inadequate in light of the findings of current science.

14. I ask that the FCC accept this affidavit and the attached exhibits into evidence for consideration under FCC 09-31, A National Broadband Plan for Our Future, as it is

material evidence of the existence of signals to which my family and I are subject, yet without proper standards based on current science.

Sworn to before me


Jeanmarie Avola

This fourth day of June, 2009

SEE ATTACHED.
Notary Public

COMMONWEALTH OF MASSACHUSETTS

MIDDLESEX SS.

On this 7TH day of JUNE, 2009, before me, the undersigned notary public, personally appeared JEANMARIE AVOLA, proved to me through satisfactory evidence of identification, which was DRIVERS LICENSE, to be the person whose name is signed on the preceding or attached document and acknowledged to me that he/ she signed it voluntarily for its stated purposes.



Robert H. Guida

Notary Public

My Commission Expires: _____

AFFIDAVIT OF ELIZABETH A. KELLEY

State of Arizona]
]
County of Pima] ss.

ELIZABETH A. KELLEY being duly sworn deposes and says:

1. My name is Elizabeth A. Kelley. I live at 3031 N. Gaia Place, Tucson, Arizona.
2. My husband, son and I have lived in Tucson, Arizona for 6 years. We live in a planned urban development of twenty-eight two story town-homes that are in a cluster arrangement in groups of two, three and four. Our ecological community owns 35 acres of natural desert preserve in common surrounding 8 acres where our homes are located. . We maintain a low or non-toxic home as much as possible and this includes low-emf design, appliances and personal habits. – no cordless phones; very limited cell phone use; filters on the electrical outlets to filter out high frequencies on the electrical wiring, incandescent lighting, no Wi-Fi systems, etc. However starting in January 2009, we detected wireless digital signals in the microwave band coming from at least 22 individual Wi-Fi networks located in our neighbor's homes and we found that the signal coverage of each Wi-Fi network extended several hundred feet, over many neighboring homes, throughout the outdoor common areas, like pathways and community gathering nodes and inside the community house.
3. We identified the strongest signal entering our home in January to be coming through the common walls we shared with our closest neighbor. All four walls are made of adobe brick and are very porous as these walls are natural insulators. The microwave signals were transmitting at the highest power level through our home – all five bars were on constantly. My husband, son and I were independently having trouble sleeping and we each were having some memory and concentration problems. Once we discovered the presence of the Wi-Fi signals in our home, in late January after suffering the effects unknowingly, we compared notes and discovered that we all were feeling unwell. Once we convinced our neighbor to remove the Wi-Fi system, our symptoms left, which told us that these signals were probably the cause of our health problems.
4. The continuous operation of these Wi-Fi networks in our community is of great concern to me and my family. The presence of these Wi-Fi signals has created an electronic cloud over our ecological village, of an uncontrollable nature, and this has diminished the quiet enjoyment we have had of our home and its natural surroundings. I am knowledgeable about the potential health risks associated with human exposure to these manmade frequencies and have learned that, while the scientific evidence is not conclusive, some scientists and medical doctors believe that chronic exposure condition

EXHIBIT 43

to these low levels of these frequencies, alone, or in combination, may be harmful to our health and to the natural environment.

5. My husband is a senior citizen and suffers from an autoimmune disease. I am also a senior citizen.

6. Our son attends a wireless school all day where he is exposed to Wi-Fi in the classroom, cell towers on or right adjacent to the school property. Licensed carriers include a T-Mobil West Corporation tower and Verizon Wireless antennas. My son is exposed daily indoors and outdoors to high levels of "second hand" cell phone signals all day long from his classmates and school personnel as the operation of wireless devices is not closely regulated by the school administration. The students use their cell phones for voice/text messaging constantly and increasingly, they are using the new I-Phones and Blackberry's as they are attracted to the many features they offer. The emissions from the newer "smart" phones are greater as they involve more data transmission.

7. Because of our concerns, we allow our son to use a cell phone but his use of it is restricted to limited texting and emergencies only. It is turned off when it not in use and it is kept near the front door at night not in his bedroom.

8. I have studied the scientific research and other evidence conducted over the past five decades on electromagnetic fields and health. I recognize that there are potential health risks associated with human exposure to electromagnetic fields and that the human body and all living matter in fact can be bioactivated by these frequencies and power levels. I have been responsible for the content management of the International Commission for Electromagnetic Safety website – www.icems.eu and was one of the authors of the Benevento and Venice Resolutions. I have read the BioInitiative Report – www.bioinitiative.org. I am a member of the Bioelectromagnetics Society - www.bioelectromagnetics.org and attend their meetings whenever possible. I review scientific papers and reviews regularly and have coauthored two papers that will be published in an upcoming ICEMs publication. One of those papers is on national and international EMF human exposure standards. I am especially concerned for the health of children, for seniors and for those with disabilities, including electrical hypersensitivity as the proliferation of wireless technologies makes it increasingly difficult to navigate in cities and towns across the US on a daily basis without moving through the radiation patterns created by wireless transmitters of all kinds, including second hand cell phone radiation. from others while they are using wireless devices at sports events, concerts, in stores, classrooms and workplaces.

9. Because of the number of cell service carriers and Wi-Fi networks operating in our area, we know there are many overlapping signals and are concerned that there are insufficient safety standards to manage the exposure of our family to these signals.

10. We have not given our permission to be in the experimental groups for a government-sanctioned study on the long term health effects of wireless technologies and believe the current human exposure guidelines are inadequate to protect our health. I know there is

insufficient knowledge about the long-term health effects of these wireless signals and no civilian government research program to independently research these long term effects. .

11. Without strong, protective FCC standards, supported by routine monitoring and enforcement of such standards, and the creation of safe zones around homes, schools, health care facilities and senior centers, we fear the hazards could affect our family's health from this constant low level radiation over time.

12. We do not want to live in our home and be electronically trespassed against. We consider these signals an abatable nuisance that is actionable. We have a basic human right to good health and well being, especially when in our homes. Whether at home, at school or at work, we want to trust our government to ensure current safety standards based on current science.

13. We understand that the EMR Policy Institute is preparing comment to submit in the current Federal Communications Commission proceeding to develop the policy for providing high-speed internet service throughout the country - FCC 09-31, A National Broadband Plan for Our Future.

14. The undersigned and all the persons in our household hereby designate The EMR Policy Institute to speak on our behalf on this FCC proceeding for the purpose of defending our rights to be safe in our own home, in our schools and our workplaces and neighborhoods from the invasion into our home, schools and workplaces of signals that may cause harm to us, because the FCC's current RF exposure guidelines are inadequate in light of the findings of current science.

15. I ask that the FCC accept this affidavit and the attached exhibits into evidence for consideration under FCC 09-31, A National Broadband Plan for Our Future, as it is material evidence of the existence of signals to which my family and I are subject, yet without proper standards based on current science.

Sworn to before me

This 5th day of June, 2009


Notary Public



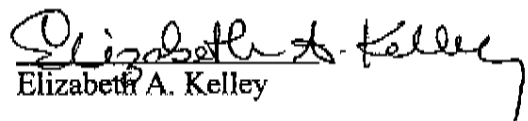

Elizabeth A. Kelley

Exhibit 44
Compilation of 2009 State and Municipal Actions
on Electromagnetic Awareness
and Opposing FCC Siting Policy and RF Safety Standards

Page 2	May 2009 - Colorado State Proclamation on Electromagnetic Sensitivity Awareness Month
Page 3	May 2009 – Connecticut State Proclamation on Electromagnetic Sensitivity Awareness Month
Page 4	May 2009 – Boca Raton, Florida Proclamation on Electromagnetic Safety Awareness Month
Page 6	May 26, 2009 – <u>By unanimous consent</u> the Board of Education of the Los Angeles Unified School District adopted its “Resolution on Wireless Telecommunications Installations” calling for <u>deployment of fiber optic broadband technology</u> for the protections it affords people and the environment from the potential hazards of exposure to radio-frequency radiation; and to join local jurisdictions in passing a resolution in favor of <u>revising Section 704 of the Federal Telecommunications Act of 1996’s preemption of consideration of the health and environmental effects of radio-frequency radiation at levels below current Federal Communication Commission standards</u> in decisions involving the placement, construction and modification of wireless facilities,
Page 7	June 2, 2009 – Los Angeles County Board of Supervisors Resolution regarding how well the existing regulations established by the Federal Communications Commission [FCC] <u>protect more vulnerable populations such as school-aged children, and how well they protect against the cumulative effect of radio-frequency emissions on people who live or work in close proximity to multiple cellular facilities;</u> and directing the Federal Communications Commission <u>to pursue a comprehensive global analysis of best practices and scientific evidence in order to update their existing standards and to adequately measure the health impacts of telecommunications towers.”</u> <u>These two motions were adopted by unanimous consent.</u> Los Angeles is the first major local government to directly take on the federal preemption of the Telecommunications Act of 1996. As part of its efforts on this issue, the Board of Supervisors will also be filing comments consistent with its motions with the FCC with regard to National Broadband Policy.
Page 12	May 12, 2009 Resolution of the City of Portland, Oregon to request the FCC to work in cooperation with the FDA and other relevant federal agencies <u>to revisit and update studies on potential health concerns arising from RF wireless emissions in light of the national proliferation of wireless use.</u>

Honorary Proclamation



BILL RITTER, JR.
GOVERNOR

ELECTROMAGNETIC SENSITIVITY AWARENESS MONTH May 2009

WHEREAS, people of all ages in Colorado and throughout the world have developed the illness of Electromagnetic Sensitivity (EMS) as a result of global electromagnetic pollution; and

WHEREAS, Electromagnetic Sensitivity is a painful chronic illness of hypersensitive reactions to electromagnetic radiations for which there is no known cure; and

WHEREAS, the symptoms of EMS include, dermal changes, acute numbness and tingling, dermatitis, flushing, headaches, arrhythmia, muscular weakness, tinnitus, malaise, gastric problems, nausea, visual disturbances, severe neurological, respiratory, speech problems, and numerous other physiological symptoms; and

WHEREAS, Electromagnetic Sensitivity is recognized by the Americans with Disabilities Act, the US Access Board and numerous commissions; and

WHEREAS, this illness may be preventable through the reduction or avoidance of electromagnetic radiations, in both indoor and outdoor environments and by conducting further scientific research;

Therefore, I, Bill Ritter, Jr., Governor of Colorado, do hereby proclaim May 2009

ELECTROMAGNETIC SENSITIVITY AWARENESS MONTH

in the State of Colorado.

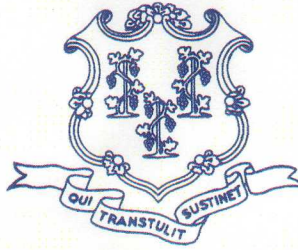


*GIVEN under my hand and the
Executive Seal of the State of
Colorado, this fifteenth day of May,
2009*

Bill Ritter Jr.

Bill Ritter, Jr.
Governor

State of



Connecticut

By Her Excellency M. Jodi Rell, Governor: an

Official Statement

WHEREAS, people of all ages in Connecticut and throughout the world have developed the illness of Electromagnetic Sensitivity (EMS) as a result of global electromagnetic pollution; and

WHEREAS, Electromagnetic Sensitivity (EMS) is a painful chronic illness of hypersensitive reactions to electromagnetic radiations for which there is no known cure; and

WHEREAS, the symptoms of EMS include dermal changes, acute numbness and tingling, dermatitis, flushing, headaches, arrhythmia, muscular weakness, tinnitus, malaise, gastric problems, nausea, visual disturbances, severe neurological respiratory, speech problems, and numerous other physiological symptoms; and

WHEREAS, Electromagnetic Sensitivity (EMS) is recognized by the Americans with Disabilities Act, the U.S. Access Board, and numerous commissions; and

WHEREAS, the health of the general population is at risk from electromagnetic exposures that can lead to this illness induced by electromagnetic radiations; and

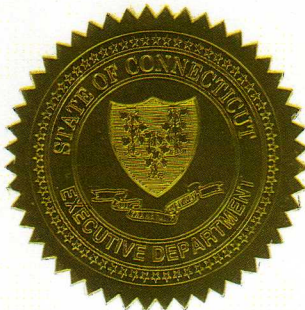
WHEREAS, this illness may be preventable through the reduction or avoidance of electromagnetic radiations, in both indoor and outdoor environments and by conducting further scientific research; and

WHEREAS, people with EMS need the support of the medical establishment and understanding of family, friends, co-workers, and society as they struggle with their illness and have to adapt to new lifestyles; now

THEREFORE, I, M. Jodi Rell, Governor of the State of Connecticut, do hereby proclaim the month of May 2009, as

ELECTROMAGNETIC SENSITIVITY (EMS) AWARENESS MONTH

in the State of Connecticut.



M. Jodi Rell
Governor

Proclamation

REQUESTED BY
MAYOR STACY RITTER
BROWARD COUNTY

WHEREAS, as a result of global electromagnetic pollution, people of all ages in Broward County and throughout the world have developed an illness known as Electromagnetic Sensitivity (EMS); and

WHEREAS, Electromagnetic Sensitivity (EMS) is a painful chronic condition of hypersensitivity reactions to electromagnetic radiation in the environment for which there is currently no known cure; and

WHEREAS, the symptoms of EMS include dermal changes, dermatitis, acute tingling and numbness, muscular weakness, headaches, heart rate changes, nausea, gastric problems, loss of visual acuity, severe neurological, respiratory, speech problems, and numerous other physiological symptoms; and

WHEREAS, EMS is recognized by the Americans with Disabilities Act, and the U.S. Access Board; and

WHEREAS, the health of the general population is at risk from electromagnetic exposures that can lead to this illness induced by electromagnetic radiations; and

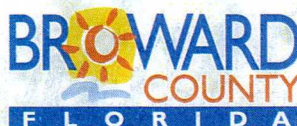
WHEREAS, this illness may be preventable through the reduction or avoidance of electromagnetic radiation, in both indoor and outdoor environments, and further scientific research to be conducted including genetics; and

WHEREAS, people with EMS need the support of the medical establishment, and the understanding of family, friends, co-workers, and society as they struggle with their illness and learn to adapt to new lifestyles; **NOW, THEREFORE,**

BE IT PROCLAIMED BY THE BOARD OF COUNTY COMMISSIONERS OF BROWARD COUNTY, FLORIDA:

That the Board hereby designates the month of May 2009 as "**ELECTROMAGNETIC SENSITIVITY (EMS) AWARENESS MONTH**" in Broward County, Florida.

May 1, 2009
Date



Stacy Ritter
Mayor

**MOTIONS/RESOLUTIONS PRESENTED TO
THE LOS ANGELES CITY BOARD OF EDUCATION FOR CONSIDERATION**

SUBJECT: Wireless Telecommunication Installations

DATE NOTICED: 5-12-09

PRESENTED FOR ACTION: 5-26-09

PRESENTED BY: Ms. Korenstein

MOVED/SECONDED BY: Ms. Korenstein
Ms. LaMotte

MOTION:

RESOLUTION: X

Whereas, The health and safety of our students and employees are fundamental concerns of the Los Angeles Unified School District;

Whereas, On June 27, 2000, the Governing Board of the Los Angeles Unified School District adopted a resolution opposing the siting of cellular facilities on or in close proximity to schools to ensure individuals, especially children, are protected from the potential health effects associated with exposures to extremely low frequency electromagnetic and radio-frequency radiation;

Whereas, The District has been successful in restricting the placement of wireless communication installations on its school facilities, it has had limited success in preventing wireless service facilities from siting near its schools due to apparent restrictions placed upon zoning authorities to consider the health and environmental effects of radio-frequency radiation;

Whereas, The desire of the wireless companies to market new wireless services has since led to a proliferation of cellular facilities targeting residential areas and areas near schools;

Whereas, Wireless infrastructure is being deployed at an unprecedented speed and cellular facilities have been approved without proper justification and proof that the placement is to serve existing demand or provide public safety benefits;

Whereas, Serious concerns exist regarding wireless permits approved near schools without proper notification to school officials and nearby property owners or proper review and oversight of the wireless applications;

Whereas, Cities, counties, and local municipalities have relied upon Section 704 of the Federal Telecommunications Act of 1996 to preempt local communities and school districts from opposing the placement, construction, and modification of personal wireless service facilities on the basis of environmental effects of radio-frequency emissions to the extent that the proposed facilities comply with the Federal Communications Commission regulations concerning such emissions;

Whereas, Cities, counties, and local municipalities have not had to demonstrate that these telecommunication facilities comply with the Federal Communications Commission regulations concerning radio-frequency emissions as they relate to multiple-transmitter sites and complex environments whereby all significant contributions to environmental exposures are cumulatively considered;

Whereas, Based upon new and emerging scientific evidence there continues to be considerable debate as to the adequacy of existing public exposure standards including those promulgated by the Federal Communications Commission;

SUBJECT: Wireless Telecommunication Installations

Whereas, The full Parliament of the European Union has raised concerns about the exposure of children and young people to electromagnetic fields and continuing uncertainties about possible health risks; and therefore, adopted on April 2, 2009 a resolution encouraging 1) the establishment of setback criteria for wireless antennas, mobile phone masts and other electromagnetic emitting devices to be set within a specific distance from schools and health institutions, 2) stricter regulations and protections for residents and consumers and 3) more reliable information be made available about the effects of exposure to electromagnetic fields to citizens in an effort to prevent a "proliferation of poorly positioned masts and transmitters;"

Whereas, The Federal Communications Commission is obliged to conduct periodic reviews of current research and analysis of the health implications associated with radio-frequency exposures in cooperation with industry, agency, and organizations responsible for community health and safety to ensure exposure guidelines are appropriate and scientifically valid; therefore, be it

Resolved, That the Governing Board of the Los Angeles Unified School District directs the Office of Environmental Health and Safety to request local jurisdictions to provide timely notification when new cellular permit applications are filed and provide comment on the health risks from the proposed facility as it relates to compliance with existing Federal Communications Commission regulations associated with cumulative exposures;

Resolved further, That the Board supports responsible deployment of fiber optic broadband technology, which is superior to wireless technology in speed, reliability, security, durability and protections it affords people and the environment from the potential hazards of exposure to radio-frequency radiation; and be it finally

Resolved, That the Board requests the County of Los Angeles, the Los Angeles City Council and all local jurisdictions that the District serves to join them in passing a resolution in favor of revising Section 704 of the Federal Telecommunications Act of 1996's preemption of consideration of the health and environmental effects of radio-frequency radiation at levels below current Federal Communication Commission standards in decisions involving the placement, construction and modification of wireless facilities, and in favor of amending the California Public Utilities Code to grant local governments authority to regulate wireless facilities in public rights of way pursuant to local planning and zoning ordinances, to be sent to Sacramento and Washington, D.C.

AYES

NOES

ABSTAIN

ABSENT

Ms. Canter	x			
Ms. Korenstein	x			
Ms. LaMotte	x			
Dr. Vladovic	x			
Ms. Galatzan	x			
Ms. Flores Aguilar	x			
Ms. Garcia				x
TOTAL	6			1

ACTION: ADOPTED

2. Recommendation as submitted by Supervisor Ridley-Thomas: Waive the facility use fee in the amount of \$200, and reduce the parking fee to \$1 per vehicle, excluding the cost of liability insurance, at Mother's Beach for the California Highway Patrol's "Wellness Day" event, to be held June 2, 2009. (09-1208)

At the suggestion of Supervisor Ridley-Thomas, and on motion of Supervisor Yaroslavsky, seconded by Supervisor Antonovich, this item was approved.

Ayes: 4 - Supervisor Molina, Supervisor Yaroslavsky, Supervisor Antonovich and Supervisor Knabe

Absent: 1 - Supervisor Ridley-Thomas

Attachments: Motion by Supervisor Ridley-Thomas

3. Recommendation as submitted by Supervisors Yaroslavsky and Antonovich: Instruct the County's legislative advocates in Washington, D.C. to actively seek and support Federal legislation to repeal limitations on State and local authority imposed by the Telecommunications Act of 1996 that infringe upon the authority of local governments to regulate the placement, construction, and modification of telecommunications towers and other personal wireless services facilities on the basis of the health and environmental effects of these facilities, and to submit comments on the National Broadband Policy in furtherance of these policy goals prior to the June 8, 2009 comment deadline; and instruct the County's legislative advocates in Sacramento to actively seek and support State legislation that would give local governments greater flexibility to regulate the placement of cellular and other wireless facilities within the road right-of-way given the unique aesthetic and safety issues that these facilities raise.

Also consideration of Supervisor Ridley-Thomas' **revised** recommendation: Instruct the County's Legislative Advocates in Sacramento to actively seek and support State **Federal** legislation that would direct the Federal Communications Commission to pursue a comprehensive global analysis of best practices and scientific evidence in order to update their existing standards to adequately measure the health impacts of telecommunications towers. (09-1201)

Jody Donnelly, Jamie T. Hall, Sally Hampton, Elise E. Kalfayan, Elizabeth A. Kelley, Gene Krischer and Miriam Nakamura addressed the Board.

After discussion, on motion of Supervisor Antonovich, seconded by Supervisor Knabe, this item was approved.

Ayes: 4 - Supervisor Molina, Supervisor Yaroslavsky, Supervisor Antonovich and Supervisor Knabe

Absent: 1 - Supervisor Ridley-Thomas

Attachments: [Joint Motion by Supervisors Yaroslavsky and Antonovich](#)
[Revised Joint Motion by Supervisors Yaroslavsky and Antonovich](#)
[Motion by Supervisor Ridley-Thomas](#)
[Revised Motion by Supervisor Ridley-Thomas](#)
[Video](#)
[Audio](#)

4. Recommendation as submitted by Supervisor Yaroslavsky: Instruct the Acting County Counsel, in conjunction with the Directors of Parks and Recreation and Public Health, and the Chief Executive Officer, to develop a smoke-free parks ordinance in Los Angeles County for the Board's consideration in 90 days. The development of the ordinance should be guided by the findings and recommendations outlined in the Directors of Parks and Recreation and Public Health's report dated April 7, 2009. (09-1200)

Jonathan E. Freedman, Chief Deputy of Public Health, and John Wicker, Chief Deputy Director of Parks and Recreation, responded to questions posed by the Board.

Robert Berger, Ray A. Chavira, Janice Chow, Gloria J. Davis, Carey January, Denise Lamb, Wesley Reutimann, Janet A Roberts and David L. Ross addressed the Board.

After discussion, on motion of Supervisor Yaroslavsky, seconded by Supervisor Antonovich, this item was duly carried by the following vote:

Ayes: 3 - Supervisor Molina, Supervisor Yaroslavsky and Supervisor Antonovich

Abstentions: 1 - Supervisor Knabe

Absent: 1 - Supervisor Ridley-Thomas

Attachments: [Motion by Supervisor Yaroslavsky](#)
[April 7, 2009 report](#)
[Video](#)
[Audio](#)

MOTION BY SUPERVISORS ZEV YAROSLAVSKY AND
MICHAEL D. ANTONOVICH

June 2, 2009

There is an ongoing debate within the scientific community and among governing bodies throughout the world regarding how thoroughly the long-term health effects of low-frequency electromagnetic and radio-frequency emissions are understood. In particular, questions have been raised regarding how well the existing regulations established by the Federal Communications Commission protect more vulnerable populations such as school-aged children, and how well they protect against the cumulative effect of radio-frequency emissions on people who live or work in close proximity to multiple cellular facilities.

Unfortunately, Section 704 of the Federal Telecommunications Act of 1996 prevents local governments, including the County of Los Angeles, from opposing the placement of personal wireless service facilities on the basis of the environmental or health effects of radio-frequency emissions to the extent that the proposed facilities comply with the Federal Communications Commission regulations concerning such emissions. In addition, the California Public Utilities Code unfairly limits the authority of local governments to regulate wireless facilities in public rights of way.

As long as questions exist as to the adequacy of these federal regulations, local

MOTION

MOLINA _____

RIDLEY-THOMAS _____

YAROSLAVSKY _____

ANTONOVICH _____

KNABE _____

governments should have the ability to include a consideration of the health and environmental effects of these facilities when deciding whether or not to approve the construction or modification of a cellular communications facility. The County should also have expanded discretion to decide how, when and where cellular facilities should be sited within the road right of way due to the unique aesthetic and safety issues that these facilities raise.

WE, THEREFORE, MOVE that the Board of Supervisors instruct the County's legislative advocates to actively seek and support federal legislation to repeal limitations on state and local authority imposed by the Telecommunications Act of 1996 that infringe upon the authority of local governments to regulate the placement, construction, and modification of telecommunications towers and other personal wireless services facilities on the basis of the health and environmental effects of these facilities, and to submit comments on the National Broadband Policy in furtherance of these policy goals prior to the June 8, 2009 comment deadline.

WE FURTHER MOVE that the Board of Supervisors instruct the County's legislative advocates to actively seek and support state legislation that would give local governments greater flexibility to regulate the placement of cellular facilities within the road right of way given the unique aesthetic and safety issues that these facilities raise.

BS S:/Motions/Cell Phone Leg

MOTION BY SUPERVISOR MARK RIDLEY-THOMAS

JUNE 2, 2009

RELATED TO ITEM #3

While local planning agencies should have the authority to regulate the placement, construction, and modification of telecommunications towers and other personal wireless services facilities, such agencies should be positioned to do so based on the most protective standards and guidelines that address the health impacts of this infrastructure.

However, diverging guidelines have been promulgated for limiting human exposure to radio-frequency radiation worldwide, leading to a persistent and publicly expressed lack of confidence in radiofrequency-exposure standards. The rationales adopted by the International Commission on Non-Ionizing Radiation Protection and the Institute of Electrical and Electronic Engineers are divergent, and the Federal Communication Commission's adopted limits are substantially less protective than the standards of many of the individual nations within Europe, Asia and other regions of the world.

As our communities become increasingly more reliant on wireless technology, it is incumbent upon this Board to call for the continued analysis and critique of the health impacts of telecommunications towers.

I, THEREFORE, MOVE that the Board of Supervisors:

Instruct the County's legislative advocates to actively seek and support federal legislation that would direct the Federal Communications Commission to pursue a comprehensive global analysis of best practices and scientific evidence in order to update their existing standards and to adequately measure the health impacts of telecommunications towers.

#

S:\MRT Motions\Related to Agenda Item 3, Telecommunications Towers.doc

MOTION

MOLINA _____

RIDLEY-THOMAS _____

YAROSLAVSKY _____

ANTONOVICH _____

KNABE _____

RESOLUTION No.

Request the federal government to update studies on potential health effects of radio frequency wireless emissions in light of significant increases in wireless use.

WHEREAS, federal law preempts state and local governments, including the City of Portland, from considering health concerns in the regulation and placement of wireless facilities, so long as such facilities otherwise comply with applicable federal law; and

WHEREAS, the Federal Communications Commission (FCC) has jurisdiction over non-federal wireless facilities, authorizing and licensing all non-federal devices, transmitters and facilities that generate Radio Frequency (RF) radiation; and

WHEREAS, the FCC relies upon federal agencies with health and safety expertise, such as the Food and Drug Administration (FDA), the Environmental Protection Agency, the National Institute for Occupational Safety and Health, and the Occupational Safety and Health Administration which have assigned roles in federal law for monitoring and investigating issues related to RF exposure; and

WHEREAS, the Government Accounting Office in 2001 prepared a report of its investigation into safety concerns related to mobile phones, and concluded that further research into wireless technology is needed, recommending the FDA take the lead in monitoring research results; and

WHEREAS, the FCC in 2003 last updated guidelines for human exposure to RF electromagnetic fields from wireless facilities, based primarily on recommendations of other federal agencies after reviews of prior scientific literature related to RF biological effects, primarily from the 1990s; and

WHEREAS, a survey released in May 2009 from the Centers for Disease Control and Prevention concluded that for the first time the number of households in the U.S. with only a cell phone exceeds the number of households in the U.S. with only a landline phone;

NOW THEREFORE BE IT RESOLVED that the Portland City Council requests the FCC to work in cooperation with the FDA and other relevant federal agencies to revisit and update studies on potential health concerns arising from RF wireless emissions in light of the national proliferation of wireless use; and

BE IT FURTHER RESOLVED, that the Council Clerk shall cause a copy of this Resolution to be sent to all members of the FCC, to the FDA Commissioner, and to all members of the Oregon Congressional Delegation.

Adopted by the Council:
Commissioner Amanda Fritz
May 12, 2009

Gary Blackmer
Auditor of the City of Portland
By

Deputy

**IDENTIFICATION OF
RESEARCH NEEDS RELATING
TO POTENTIAL BIOLOGICAL
OR ADVERSE HEALTH
EFFECTS OF WIRELESS
COMMUNICATION DEVICES**

Committee on Identification of Research Needs Relating to Potential
Biological or Adverse Health Effects of Wireless Communications Devices

Nuclear and Radiation Studies Board

Division on Earth and Life Studies

NATIONAL RESEARCH COUNCIL
OF THE NATIONAL ACADEMIES

THE NATIONAL ACADEMIES PRESS
Washington, D.C.
www.nap.edu

EXHIBIT 45

Executive Summary

The U.S. Food and Drug Administration (FDA) of the Department of Health and Human Services asked the National Academies to organize a workshop of national and international experts to identify research needs and gaps in knowledge of biological effects and adverse health outcomes of exposure to radiofrequency (RF) energy from wireless communications devices. To accomplish this task, the National Academies appointed a seven member committee to plan the workshop.¹ Following the workshop, the committee was asked to issue a report based on the presentations and discussions at the workshop that identified research needs and current gaps in knowledge. The committee's task did not include the evaluation of health effects or the generation of recommendations relating to how the identified research needs should be met.

For the purposes of this report, the committee defines research needs as research that will increase our understanding of the potential adverse effects of RF energy on humans. Research gaps are defined as areas of research where the committee judges that scientific data that have potential value are presently lacking, but that closing of these gaps is either ongoing and results should be awaited before judgments are made on further research needs, or the gaps are not judged by the committee to be of as high a priority with respect to **directly addressing health concerns at this time**.

The research needs and gaps identified by the committee are presented in abbreviated form in the report Summary and in more detail in the text.

¹Committee on Identification of Research Needs Relating to Potential Biological or Adverse Health Effects of Wireless Communications Devices.

These needs and gaps are committee judgments derived from the workshop presentations and discussions, and the report does not necessarily reflect the views of the FDA, individual workshop speakers, or other workshop participants.

The committee judged that important research needs included, in order of appearance in the text, the following:

- Characterization of exposure to juveniles, children, pregnant women, and fetuses from personal wireless devices and RF fields from base station antennas.
- Characterization of radiated electromagnetic fields for typical multiple-element base station antennas and exposures to affected individuals.
- Characterization of the dosimetry of evolving antenna configurations for cell phones and text messaging devices.
- Prospective epidemiologic cohort studies of children and pregnant women.
- Epidemiologic case-control studies and childhood cancers, including brain cancer.
- Prospective epidemiologic cohort studies of adults in a general population and retrospective cohorts with medium to high occupational exposures.
- Human laboratory studies that focus on possible adverse effects on electroencephalography² activity and that include a sufficient number of subjects.
- Investigation of the effect of RF electromagnetic fields on neural networks.
- Evaluation of doses occurring on the microscopic level.
- Additional experimental research focused on the identification of potential biophysical and biochemical/molecular mechanisms of RF action.

²*Electroencephalography* is a neurological diagnostic procedure that records the changes in electrical potentials (brain waves) in various parts of the brain.

Summary

In recent years there has been a rapid increase in the use of wireless communications devices, and a great deal of research has been carried out to investigate possible biological or human health effects resulting from the use of these devices. In a more focused initiative, the U.S. Food and Drug Administration (FDA) of the Department of Health and Human Services asked the National Academies to organize a workshop of national and international experts to identify research needs and gaps in knowledge of biological effects and adverse health outcomes of exposure to radiofrequency (RF) energy from wireless communications devices (for full statement of task see Appendix A). To accomplish this task, the National Academies appointed a seven member committee to plan the workshop (Appendix B).¹ Following the workshop, the committee was asked to issue a report based on the presentations and discussions at the workshop that identifies, in the committee's judgment, research needs and current gaps in knowledge. The committee's task did not include the evaluation of health effects or the generation of recommendations relating to how identified research needs should be met.

The requested workshop was held on August 7-9, 2007 (Appendix C). It was organized into five sessions to identify research needs and gaps in the following areas:

- dosimetry and exposure,
- epidemiology,

¹Committee on Identification of Research Needs Relating to Potential Biological or Adverse Health Effects of Wireless Communications Devices.

- human laboratory studies,
- mechanisms, and
- animal and cell biology.

A sixth session, which was held on the morning of the third day of the workshop, introduced overarching issues and solicited research needs and gaps from workshop speakers and other interested parties.

The organizing committee invited experts from 9 countries (Appendix D) to speak on research needs and gaps relating to potential biological or adverse health effects of wireless communications devices. Written contributions relating to research needs and gaps were also solicited for consideration prior to and at the workshop (individuals who submitted written contributions are listed in Appendix E).

The report contains the committee's evaluation of the workshop presentation and discussion sessions followed by the committee's identification of research needs and gaps.

RESEARCH NEEDS AND GAPS

For the purposes of this report, the committee defines "research needs" as research that will increase our understanding of the potential adverse effects of RF energy on humans. "Research gaps" are defined as areas of research where the committee judges that scientific data that have potential value are presently lacking, but that closing of these gaps is ongoing, and results should be awaited before judgments are made on further research needs, or the gaps are **not judged by the committee to be of as high a priority** at this time.

To the extent possible, near-, mid-, and long-term research opportunities have been characterized as follows: the committee judged that "research needs" are near-term research opportunities. "Research gaps" that are currently being filled may result in mid-term research opportunities, depending on the outcome of the current research. "Research gaps" defined as being of lower priority **with respect to directly addressing health concerns comprise** possible long-term research opportunities.

Abbreviated versions of committee judgments on research needs and gaps are organized below in the Summary in order of the five sessions that comprised the first two days of the workshop. The reader is referred to the text of the report for details on research needs and gaps.

DOSIMETRY AND EXPOSURE

Research Needs

1. There is a need to characterize exposure of juveniles, children, pregnant women, and fetuses, both for personal wireless devices (e.g., cell phones, wireless personal computers [PCs]) and for RF fields from base station antennas including gradients and variability of exposures, the environment in which devices are used, and exposures from other sources, multilateral exposures, and multiple frequencies.

2. Wireless networks are being built very rapidly, and many more base station antennas are being installed. A crucial research need is to characterize radiated electromagnetic fields for typical multiple-element base station antennas and for the highest radiated power conditions with measurements conducted during peak hours of the day at locations close to the antennas as well as at ground level.

3. The use of evolving types of antennas for hand-held cell phones and text messaging devices need to be characterized for the Specific Absorption Rates (SARs) that they deliver to different parts of the body so that this data is available for use in future epidemiologic studies.

4. RF exposure of the operational personnel close to multi-element newer base station antennas is unknown and could be high. These exposures need to be characterized. Also needed are dosimetric absorbed power calculations using realistic anatomic models for both men and women of different heights.

Research Gaps

Research Ongoing

1. Although several dosimetric models are currently available for children and individuals of reduced stature, a research gap remains in the further development of models of several heights for men, women, and children of various ages for use in the characterization of SAR distributions for exposures characteristic of cell phones, wireless PCs, and base stations.

Judged to Be of Lower Priority

2. Presently, there is negligible or relatively little knowledge of local SAR concentration (and likely heating) in close proximity to metallic adornments and implanted medical devices for the human body.

3. There is a need for improved exposure systems for human laboratory studies including reliable and accurate exposure assessment for designs of next generation exposure systems for human laboratory studies. Furthermore, location-dependent field strength needs to be accounted for

in the characterization of exposures. A very important consideration is the validation of results by several independent investigators so that reliable and accurate exposure assessments are available for both comparisons between systems and between laboratories.

4. There is a need for an updated survey in a properly selected sample of the U.S. population to characterize and document rapidly changing exposures to electromagnetic field strengths that would improve our knowledge of the exposure levels for the population at large, taking into account the large number of new cell phones and base stations, radio and TV stations, and a wide array of other communications devices, including a survey of measured personal exposure with information on location and activity at the time of measurement including the difference between indoor and outdoor environments.

EPIDEMIOLOGY

The committee identified significant research needs for a number of epidemiologic studies, particularly of children.

Adults

Research Needs

1. **Prospective Cohort Studies.** A prospective cohort study will allow for the evaluation of diverse outcomes, but a very large sample size and extended follow-up is required for rare outcomes or those that occur only with very long latencies.

2. **Occupational Cohorts with Medium to High Exposure.** None of the occupational studies to date have been based on an adequate exposure assessment. Much work is needed to identify occupations with potentially high RF exposures and to characterize them.

Research Gaps

Judged to Be of Lower Priority

1. Nested case-control studies of rare diseases.
2. Observational studies on subjective outcomes.

Children

Research Needs

1. **Prospective Cohort Studies of Pregnancy and Childhood.** Children are potentially exposed from conception through maternal wireless device use and then postnatally when they themselves become users of mobile phones.

2. **Case-control Study of Children Mobile Phone Users and Brain Cancer.** Owing to widespread use of mobile phones among children and adolescents and the possibility of relatively high exposures to the brain, investigation of the potential effects of RF fields in the development of childhood brain tumors is warranted.

Research Gaps

Research Ongoing

1. Case-control studies of childhood cancer with improved exposure assessment taking into account all major fixed point sources of RF exposure (base stations, AM, FM, TV antennas, and other sources).

HUMAN LABORATORY STUDIES

Research Needs

There are some significant research needs for human laboratory studies. Due to the paucity of data from identically replicated experiments,

1. There is a need for experiments focusing on possible adverse RF effects identified by changes in electroencephalogram activity as well as a need to include an increased number of subjects.

Research Gaps

Research Ongoing

1. Little or no information is available on possible neurophysiological effects developing during long-term exposure to RF fields.

2. Risks of exposure to RF fields in elderly volunteers are not well explored.

3. There is a continuing need for experiments focusing on possible adverse RF effects identified by changes in cognitive performance functions.

Judged to Be of Lower Priority

4. There is a need to conduct human volunteer studies to investigate potential health implications arising from interaction of cell phones with hearing aids and cochlear implants.

MECHANISMS

Research Needs

1. The effect of RF electromagnetic fields on neural networks is a topic needing further investigation. There are indications that neural networks are a sensitive biological target.

2. Evaluation of doses occurring on the microscopic level is a topic needing further investigation.

Research Gaps

Research Ongoing

1. Mechanisms that can be modeled theoretically with the use of software-based nonlinear cell models that describe field-induced molecular changes. It is currently unclear if a nonlinear biological mechanism exists that could lead to demodulation effects. There is some research with respect to this question underway.

Judged to Be of Lower Priority

2. It is unclear whether low-level RF exposure can trigger effects through stimulation of cellular thermo-receptors.

3. Knowledge is lacking concerning the effects of electromagnetic fields on ion and molecular transport through the cell membrane.

IN VIVO AND IN VITRO STUDIES IN EXPERIMENTAL MODEL SYSTEMS

Research Needs

1. Additional experimental research focused on the identification of potential biophysical and biochemical/molecular mechanisms of RF action is considered to be of the highest priority.

Research Gaps

Research Ongoing

1. Following completion of several large ongoing studies, a “weight-of-the-evidence” analysis can be conducted to synthesize and evaluate the entire data set. At that time, rational, informed decisions can be made concerning the value of conducting additional oncogenicity² studies in standard-bred laboratory animals.

2. The use of genetically engineered animals may increase the sensitivity of laboratory studies to detect weak effects, and may be particularly suitable to evaluate the possible interactions between RF fields and other agents in disease causation.

3. The overall database for RF fields and cancer would be strengthened by additional studies using multi-stage model systems for cancer in tissues (such as the brain) that have been hypothesized to be targets of RF action.

4. Although genetic toxicology studies have failed to identify potential RF health effects, additional genetic toxicology studies may be warranted should evidence of oncogenicity be identified in any of the ongoing chronic toxicity/oncogenicity bioassays of RF fields in laboratory animals, or in any future studies to be performed using genetically engineered animal models.

5. A number of potentially critical cancer-related endpoints have received only very limited study and are identified in the report text.

6. In addition to cancer-related endpoints, data gaps exist in a number of other areas of toxicology in which knowledge is needed to support a complete evaluation of the possible health effects of RF exposure; these gaps are identified in the body of the report.

²*Oncogenicity* is the capacity to cause tumors.

Introduction

The U.S. Food and Drug Administration (FDA) of the Department of Health and Human Services asked the National Academies to organize a workshop of national and international experts to discuss research needs and gaps in our knowledge of the biological effects and adverse health outcomes of exposure to radiofrequency (RF) energy from wireless communications devices. Although the sponsor's main interest centers on hand-held devices such as cell phones or portable home phones, base stations and antennas were also considered by the committee based on discussions with the sponsors indicating that consideration of these components would not be discouraged.

The workshop was announced on the National Academies' Current Projects site, and attendance was available to anyone interested in attending the workshop. This workshop announcement included instructions for submitting written comments for consideration at the workshop. A workshop announcement was also provided to the FDA and the Bioelectromagnetics Society for distribution as deemed appropriate, as well as to individuals who expressed an interest in the workshop.

It was clear from the presentations and discussions at the workshop that a great deal of research has been accomplished to date, but sometimes with inconsistent results. This workshop, however, was not intended to evaluate health effects, and the report based on a workshop does not assess health effects or make recommendations as to how the identified research needs should be met. The National Academies was asked to issue a report following the workshop that exclusively draws on the workshop

presentations and discussions to identify current research needs and gaps in knowledge. The committee was also asked to provide its consensus findings on near-, mid-, and long-term research opportunities. The report is a committee product and does not necessarily reflect the views of the FDA, individual workshop speakers, or other workshop participants.

To organize the workshop and to identify experts to address research needs and gaps relating to potential biological or adverse health effects of wireless communications devices, the committee (Appendix B) held a workshop planning meeting on July 9-10, 2007. As a result of this planning meeting, international experts from 9 countries were invited to speak at the workshop. Written contributions on research needs and gaps for the committee's consideration were also solicited for submission prior to the workshop, which was held on August 7-9, 2007. A total of 16 written contributions were received from individuals listed in Appendix E. The speakers' presentations, panel discussions, comments from interested workshop attendees, and written contributions were considered by the committee as it developed this report.

The workshop itself was organized into six sessions (Appendix C). The first five sessions consisted of invited participants and panel discussions that identified research needs and gaps in the following areas:

- exposure and dosimetry,
- epidemiology,
- human laboratory studies,
- mechanisms, and
- animal and cell biology.

A sixth session, which was held on the morning of the third day, introduced overarching issues and solicited research needs from speakers and other interested participants. Overarching issues were determined by the committee at the workshop planning meeting held in July 2007. The purpose of the sixth session was to make sure that research needs that might reach across the disciplines were discussed and identified. The issues were thus designed to address current topics in RF research. A short introduction of each subject was made by a committee member and unrestricted input was then invited from interested parties attending the workshop. The overarching issues were as follows:

- Are there differences in health effects of short-term vs. long-term exposure?
- Are there differences between local vs. whole-body exposures?
- Can the knowledge of biological effects from current signal types and exposure patterns be extrapolated to emerging exposure scenarios?

- Are there any biological effects that are not caused by an increase in tissue temperature (nonthermal effects)?
- Does RF exposure alter (synergize, antagonize, or potentiate)¹ the biological effects of other chemical or physical agents?
- Are there differences in risk to children?
- Are there differences in risk to other subpopulations such as the elderly and individuals with underlying disease states?

These overarching issues and the general discussions that followed were factored into the committee's deliberations in developing the report. From the presentations and discussions that took place at the workshop sessions, the committee identified research needs and gaps; the selection of these research needs and gaps are committee judgments.

For the purposes of this report, the committee defines research needs as research that will increase our understanding of the potential adverse effects of RF energy on humans. Research gaps are defined as areas of research where the committee judges that scientific data that have potential value are presently lacking, but that closing of these gaps is ongoing, and results should be awaited before judgments are made on further research needs, or the gaps are **not judged by the committee to be of as high a priority at this time.**

To the extent possible, near-, mid-, and long-term research opportunities have been characterized as follows: the committee judged that research needs are near-term research opportunities. Gaps that are currently being filled may result in mid-term research opportunities, depending on the outcome of the current research. Gaps defined as being of lower priority with respect to **directly addressing health concerns comprise possible long-term research opportunities.**

¹*Synergize*: two or more agents or forces interacting so that their combined effect is greater than the sum of their individual effects. *Antagonize*: two or more agents or forces interacting so that one agent counteracts the effect of another agent. *Potentiate*: one agent promotes or strengthens a biochemical or physiological action or effect of another agent.

Dosimetry and Exposure

This section reports on the workshop session on radiofrequency (RF) energy,¹ dosimetry,² and exposure.³

As discussed by Dr. van Deventer at the workshop (van Deventer 2007) there is a need to characterize exposure of juveniles, children, pregnant women, and fetuses both for personal wireless devices (e.g., cell phones, wireless personal computers [PCs]) and for RF fields from base station antennas. This characterization includes taking into account gradients and variability of exposures due to the actual use of the device, the environment in which it is used, and exposures from other sources, multilateral exposures, and multiple frequencies. The data thus generated would help to define exposure ranges for various groups of exposed populations.

There is a need for reliable and accurate exposure assessment for designs of the next generation of epidemiologic studies, such as development of an index that integrates service technology and location of use (both

¹RF energy includes waves with frequencies ranging from about 3000 waves per second (3 kHz) to 300 billion waves per second (300 GHz). Microwaves are a subset of radio waves that have frequencies ranging from around 300 million waves per second (300 MHz) to 300 billion waves per second (300 GHz).

²RF dosimetry is the science pertaining to coupling of RF waves, e.g., from cell phones to the human body. Because of the human anatomy, RF dosimetry must take into account the shape as well as the heterogeneity of the tissues. The unit for absorbed dose (i.e., rate of energy absorption per unit mass) is Watts/kg.

³RF exposure is the quantification of the absorbed RF energy and its distribution for the various parts of the body. The absorbed energy and its distribution within the exposed body is a function of the incident electromagnetic fields described in units of Watts/meter-squared and the spatial variation of these fields.

geographic location and whether a phone is primarily used indoors or outdoors). Towards this end, we need tissue-characterized models of children of different ages and of pregnant women for dosimetric calculations. Specific Absorption Rates (SARs)⁴ for children are likely to be higher than for adults, both for cell phones and for base station exposures, due to the fact that the exposure frequency is closer to the whole-body resonance frequency for shorter individuals such as children (ANSI 1982; Gandhi 1979; Wang et al. 2006; Hirata et al. 2007). Better characterization of SARs for children of various age groups is, therefore, needed. Furthermore, models are not presently adequate for men and women of various heights and for children of various ages.

BASE STATIONS

Wireless networks are being built very rapidly, and many more base station antennas are being installed. Maintenance personnel may be exposed to fairly high electromagnetic fields emanating from base station antennas⁵ unless all of the typically four to six antennas mounted on the base station are turned off. For all of the base station antennas, the radiated power is on the order of several tens of watts, with higher powers being radiated at peak hours of the day. Though not as well characterized, particularly for multiple co-located base station antennas, the radiated RF fields for rooftops near base stations may also be fairly high. The quantification of SAR distributions from base stations is fairly minimal and those distributions are of concern for professionals involved in maintenance of base stations, building/roof maintenance personnel, and members of the public that live in close proximity to the antennas. There are also subpopulations among the employees, which might be exposed to greater amounts of RF energy than the average population. The characterization of these subpopulations is important.

Thus, the interest in base station exposures close to the antennas is driven by the potential health effects on antenna repair professionals and building/roof maintenance workers from relatively high, acute exposures, but the interest in exposures for members of the public that live in close proximity to the antennas or for the public at the ground level at larger distances is motivated by the need to address public concern about very low

⁴*Specific Absorption Rate* (SAR) is a measure of the rate at which radiofrequency (RF) energy is absorbed by the body when exposed to an RF electromagnetic field. The most common use is in relation to cellular telephones.

⁵Base station antennas mounted on rooftops, on poles, or other elevated positions are the important intermediaries for cell phone communications.

level, chronic exposures that are in fact similar to those from existing TV and radio antennas albeit at different frequencies.

Most of the reported studies to date have involved one base station antenna and have used mostly homogeneous models, often of simplified circular or rectangular cross sections of the exposed human. One study involving a heterogeneous, anatomically based model consisting of diverse constituents, but still assuming a single antenna rather than typical arrangements of four to six antennas, is given in Gandhi and Lam (2003). In other words, the studies to date do not pertain to the commonly used multiple-element base station radiators. Also, unlike highly localized cell phone RF energy deposition, the base station exposures involve much, if not all, of the body and would have slightly different radiator origins (for multi-element base stations) and may be multi-frequency as well, particularly if several different-frequency base station antennas are co-located. Furthermore, because of the whole-body resonance⁶ phenomenon, the SAR is likely to be higher for shorter individuals due to the closeness of the frequency/frequencies of exposure to the whole-body resonance frequency. In addition to the rapid growth in the number of base stations since 1990, there has also been growth in other sources of RF radiation from cordless phones, wireless computer communications, and other communications systems. The last general survey of RF levels in U.S. cities was during the 1970s, and an updated survey of RF intensities would be useful background for future epidemiologic studies. There are many indoor wireless systems as well as cell phones, which are used both indoors and outdoors. Measurements of the differences in the exposures generated by the use of these devices in these environments will be of value in determining if there are any health effects resulting from exposures to low levels and intermittent sources of RF radiation.

MOBILE PHONES

The use of evolving types of antennas for cell phones and text messaging devices needs to be characterized for the SARs that they deliver to different parts of the body so that this data is available for use in future epidemiologic studies. A great deal of research has been done by many laboratories worldwide to understand coupling of RF energy irradiation from cell phone antennas to the human head. For most of these studies, the

⁶*Whole-body resonance*: It has been shown that each individual absorbs maximum energy from incident RF fields at frequencies that are higher for shorter individuals. Furthermore the SAR at this resonance frequency is increasingly higher for shorter individuals (Gandhi 1979). As the absorbed energy diminishes inversely with frequency in the post-resonance region, it is still quite high for the shorter individuals at base station frequencies because of the relative proximity of these frequencies to the resonance frequencies.

researchers have assumed that cell phones are held against one of the ears, and studies have used a variety of anatomically based models. Cell phones were assumed to have pull-out linear rod antennas with dimensions on the order of several centimeters. However, most of the recent telephones use built-in antennas of various shapes for which additional published information is needed.

The published results on pull-out linear rod antennas are generally in agreement in that the RF energy coupled to the human head is the highest for the ear and for a limited volume (approximately $3 \times 3 \times 3$ cm) of the brain proximal to the cell phone (IEEE 1996). As expected, the penetration of the coupled electromagnetic fields⁷ into the brain is shallow (approximately 2 cm) at higher frequencies (i.e., 1800-1900 MHz). For cell phones held against the ear, the SAR drops off rapidly for the regions of the brain away from the antenna and is negligible for the rest of the human body except for the hand.

Wireless technology is leading to devices such as wireless PCs, handheld devices used for video calls, and other handheld devices for text messaging. In their typical usage, the antennas are closer to the hand or other parts of the body. SAR distributions for these newer devices have been obtained using homogeneous liquid-filled flat phantom models. Though these models are reasonably accurate to get the 1 or 10 Watts/kg average SAR needed for safety compliance testing, they are incapable of providing detailed SAR distributions because of lack of detailed anatomical features, e.g., for the hand or the human lap or parts of the body close to the devices. Additionally, such models cannot resolve the detailed RF field distribution at the cellular and subcellular levels. Given a set of anatomical data, the RF field distributions can be modeled and estimates can be made of the effects of various wave forms and carrier frequencies. An important research gap is the lack of models of several heights for men, women, and children of various ages for use in the characterization of SAR distributions for exposures characteristic of cell phones, wireless PCs, and base stations.

Presently, there is negligible or relatively little knowledge of local SAR concentration (and likely heating) in close proximity to metallic adornments and implanted medical devices for the human body. Examples include metal rim glasses, earrings, and various prostheses (e.g., hearing aids, cochlear implants, cardiac pacemakers). Research is therefore lacking to quantify the enhanced SARs close to metallic implants and external metallic adornments.

⁷If either the electric or magnetic field has a time dependence, then both fields must be considered together as a coupled electromagnetic field using Maxwell's equations.

LABORATORY EXPOSURE SYSTEMS

There is a need for improved exposure systems for human laboratory studies. Furthermore, location-dependent field strength needs to be accounted for in the characterization of exposures. Most of the present-day exposure systems used in laboratory studies focus on the exposure of the head. Though exposures to the head are relevant for most cell phone exposures, whole-body exposures due to base stations are a research need. The laboratory exposure systems also need to include ELF⁸ and pertinent modulation protocols.⁹

There is a need for reliable and accurate exposure assessment for designing the next generation of epidemiologic studies, such as development of an index that integrates service technology and location of use (both geographic location and whether a phone is primarily used indoors or outdoors). For human laboratory studies there has been considerable effort to quantify the uncertainties of the different methods used in dosimetry. However, there is little information about the overall accuracy of the dosimetric approaches with respect to reality and variability. The accuracy of dosimetric approaches is particularly important as well as the validation of results by several independent investigators to establish SAR variability.

The committee's evaluation of presentations and discussions at the workshop has resulted in the identification of the following research needs and gaps.

Research Needs

1. There is a need to characterize exposure of juveniles, children, pregnant women, and fetuses both for personal wireless devices (e.g., cell phones, wireless PCs) and for RF fields from base station antennas including gradients and variability of exposures, the environment in which devices are used, and exposures from other sources, multilateral exposures, and multiple frequencies. The data thus generated would help to define exposure ranges for various groups of exposed populations.

2. Wireless networks are being built very rapidly, and many more base station antennas are being installed. A crucial research need is to characterize radiated electromagnetic fields for typical multiple-element (four to six elements) base station antennas for the highest radiated power conditions and with measurements conducted during peak hours of the day at locations close to the antennas as well as at ground level. A study of the wire-

⁸ELF: Extremely low frequency fields, such as the 50 and 60 Hz power frequency fields used in Europe and the United States, respectively.

⁹Some commonly used modulation protocols are TDMA (time division multiple access) and CDMA (code division multiple access).

Nominations from FDA's Center from Device and Radiological Health

Radio Frequency Radiation Emissions of Wireless Communication Devices (CDRH)

Executive Summary

Over 80 million Americans currently use wireless communications devices (e.g., cellular phones) with about 25 thousand new users daily. This translates into a potentially significant public health problem should the use of these devices even slightly increase the risk of adverse health effects. Currently cellular phones and other wireless communication devices are required to meet the radio frequency radiation (RFR) exposure guidelines of the Federal Communications Commission (FCC), which were most recently revised in August 1996. The existing exposure guidelines are based on protection from acute injury from thermal effects of RFR exposure, and may not be protective against any non-thermal effects of chronic exposures. Animal exposure research reported in the literature suggests that low level exposures may increase the risk of cancer by mechanisms yet to be elucidated, but the data is conflicting and most of this research was not conducted with actual cellular phone radiation. In one study transgenic mice exposed to a digital phone signal developed more than twice as many non-lymphoblastic lymphomas as the unexposed control group, a statistically significant increase. These results suggest a potential carcinogenic effect from the digital phone signal using this animal model. There is wide agreement within the international scientific community regarding the types of research needed to assess whether RFR from wireless communications poses a health risk to users. Research needs have been articulated by a number of groups, including the European Commission and the World Health Organization International EMF Project. Animal experiments are crucial because meaningful data will not be available from epidemiological studies for many years due to the long latency period between exposure to a carcinogen and the diagnosis of a tumor. Studies must also be performed in animals that are genetically predisposed to cancer and endpoints other than cancer, such as ocular damage and neurological effects, must also be examined. High priority must be given to replication of prior studies that indicate adverse effects, such as the transgenic mice model mentioned above. There is currently insufficient scientific basis for concluding either that wireless communication technologies are safe or that they pose a risk to millions of users. A significant research effort, involving large well-planned animal experiments is needed to provide the basis to assess the risk to human health of wireless communications devices.

A. Summary of Biological Effects - Wireless Telephone Radiation

As noted above, the use of wireless communications devices (e.g., cellular phones) is increasing rapidly. FDA concluded over five years ago that little was known about the possible health effects of repeated or long-term exposure to low levels of RFR of the types emitted by such devices. However, some scientific articles suggest a potential cancer risk may exist. While some other studies did not find evidence of carcinogenicity for RFR, data from long-term animal studies with a multi-dose exposure paradigm are unavailable. Properly conducted scientific research is needed to address these issues and

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fill in the gaps in our understanding of the biological effects of exposure to RFR.

B. Physical Properties of Wireless Telephone Radiation

Personal (cellular) telecommunications is a rapidly evolving technology that uses microwave radiation to communicate between a fixed base station and a mobile user. Presently, most systems employ analog technology, where the low frequency speech signals are directly modulated on to a high frequency carrier in a manner similar to a frequency-modulated (FM) radio. The power level is effectively constant during the modulation, although some power control may occur. However, the recently introduced second-generation systems in Europe, USA and Japan employ digital technology, where the low frequency speech is digitally coded prior to modulation. There is a strong trend towards hand-held cellular telephones, which means that the radiating antenna is close to the head of the user. In the relatively near future the use of digital systems will predominate.

The electric and magnetic fields surrounding a cellular telephone handset near a person's head are complicated functions of the design and operating characteristics of the handset and its antenna and the electric and magnetic fields vary considerably from point to point.

Microwave radiation absorption occurs at the molecular, cellular, tissue and whole-body levels. The dominant factor for net energy absorption by an entire organism is related to the dielectric properties of bulk water, which ultimately causes transduction of electromagnetic energy into heat. For laboratory experiments, exposure conditions can be classified as thermal or non-thermal. There are no strict boundaries for these different exposure regimens because a number of factors may influence the characteristics of exposure. Thermal effects are well established and form the biological basis for restricting exposure to RF fields. In contrast, non-thermal effects are not well established and, currently, do not form a scientifically acceptable basis for restricting human exposure to microwave radiation at those frequencies used by hand-held cellular telephones. A large number of biological effects have been reported in cell cultures and in animals, often in response to exposure to relatively low-level fields, which are not well established but which may have health implications and are, hence, the subject of on-going research. It is not scientifically possible to guarantee those non-thermal levels of microwave radiation, which do not cause deleterious effects for relatively short exposures, will not cause long-term adverse health effects.

C. Human Exposure

For the purpose of radiation protection, dosimetric quantities are needed to estimate the absorbed energy and its distribution inside the body. A dosimetric quantity that is widely adopted for microwaves is the Specific Absorption Rate (SAR). SAR is defined as the time derivative of the incremental energy, absorbed by or dissipated in an incremental mass contained in a volume element of a given density. SAR is expressed in the unit watt per kilogram (W kg^{-1}). Numerical calculations, based upon coupling from handsets to an anatomically realistic numerical phantom of the head have been performed. Such

calculations have shown that, during normal operation, a radiated power of 1 W gives rise to a maximum SAR of 2.1 W kg^{-1} at 900 MHz and 3.0 W kg^{-1} at 1.8 GHz averaged over any 10 g of tissue. Typical handset powers are 0.6 W. To enable communication with locations not easily reachable with land networks, satellite communication systems have been recently designed and implemented. New systems will involve small portable units and hand-held sets similar to current cellular telephones. In these special cases, higher power classes can be envisioned.

Digital cellular telephones transmit information in bursts of power. The power is turned on and off, and the equipment transmits for a fraction of the time only and then is silent for the remaining part of the burst period. The basic repetition frequency is 217 Hz for GSM and DCS 1800 systems and 100 Hz for DECT; however, the spectrum also contains a number of higher harmonics due to the narrow pulse, so there are also frequencies in the kilohertz region. Owing to the complexity of these communications systems, there are also 2 and 8 Hz components in the signal, apart from multiples of 100 and 217 Hz.

D. Regulatory Status

As described previously, when tissues are exposed to microwave fields strong enough to raise the temperature, the resulting biological effects are said to be thermal. There is currently a general consensus in the scientific and standards community that the most significant parameter, in terms of biologically relevant effects of human exposure to RF electromagnetic fields, is the SAR in tissue. SAR values are of key importance when validating possible health hazards and in setting standards.

Possible thermal effects in the eye are also important. The latter is regarded as potentially sensitive to heating because of the limited cooling ability of the lens caused by the lack of a blood supply and the tendency to accumulate damage and cellular debris. Effects of electromagnetic radiation on the three major eye components essential for vision, the cornea, lens and retina, have been investigated, the largest number of studies being concerned with cataracts. It has been established that lens opacities can form after exposure to microwave radiation above 800 MHz; however, below about 10 GHz cataract induction requires long exposures at an incident power density exceeding 10^3 Wm^{-2} . SARs in the lens large enough to produce temperatures in the lens greater than 41°C are required. Effects on the retina have been associated with levels of microwave radiation above 500 Wm^{-2} . All these data suggest that thermal effects will probably only occur in people subjected to whole body or localized heating sufficient to increase tissue temperatures by more than 1°C . These various effects are well-established and form the biological basis for restricting exposure to RF fields. In contrast, non-thermal effects are not well-established and, currently, do not form a scientifically acceptable basis for restricting human exposure to microwave radiation at those frequencies used by handheld cellular telephones and base stations.

The setting of safety limits for human exposure to RF electromagnetic fields is currently performed in two steps. First, basic limits (or restrictions) for SARs inside the body are specified from biological considerations in terms of whole-body SAR and SAR averaged

over a small mass of tissue. Then relationships between SAR values and unperturbed field strengths are used to set derived limits (or reference or investigation levels) for field strengths and power density to be used in assessing compliance with the adopted standard. Studies to relate core temperature rise with whole-body averaged SARs (Elder and Cahill, 1984) suggested that the 1-4 W kg⁻¹ range is the threshold at which significant core temperature rise occurs. Another approach to identify thresholds of whole body thermal effects is based on the change in animal behavior exposed to RF fields. A review of animal data indicates a threshold for behavioral responses in the same 1-4 W kg⁻¹ range. Another review of animal data also concluded that the threshold of RF exposure in terms of the whole body SAR is 4 W kg⁻¹ (IEEE, 1991). Based on the estimated threshold and a safety factor of 10, the whole body averaged SAR of 0.4 W kg⁻¹ has been widely accepted as the basic restriction for occupational exposures under controlled environmental conditions (IEEE, 1991). For the general public under uncontrolled environmental conditions, a five times smaller value of 0.08 W kg⁻¹ has often been adopted as the basic restriction. In order to avoid excessive local exposures, maximum local SARs are limited as one of the basic restrictions in safety guidelines.

Basic restrictions for partial body exposure are given in terms of maximum local SARs. Local SAR values change spatially within the body depending on the depth of penetration, shape of the body part, and tissue homogeneity. It is therefore important to define the mass of tissue taken to evaluate average local body SARs. The limit values of local SARs have not been unified between various standards or guidelines. However, a local SAR limit of 8 W kg⁻¹ averaged over a mass of 1g has also been adopted (IEEE, 1991).

Currently cellular phones and other wireless communication devices are required to meet the RFR exposure guidelines of the Federal Communications Commission (FCC), which were most recently revised in August 1996. Since the FCC is not a health agency, it sought and received guidance from the federal health agencies including the Environmental Protection Agency, the National Institute of Occupational Health and Safety, the Occupational Safety and Health Administration, and the FDA. These exposure guidelines incorporated the most recent exposure standards of the National Commission for Radiation Protection and the American National Standards Institute, and are subject to continuing review and revision as new scientific information which could define a better basis for such exposure guidelines becomes available. As noted above, the existing exposure guidelines are based entirely on protection from acute injury from thermal effects of RF exposure, and may not be protective against any non-thermal effects of chronic exposures.

E. Toxicological Data

The evidence for a clastogenic (chromosome breaking) or genetic effect of microwave radiation exposure is contradictory and, overall, it may be concluded that RF/microwave radiation is not genotoxic. Therefore, it may also be concluded that RF/microwave radiation is not a tumor initiator and that, if it is somehow related to carcinogenicity, this has to be by some other mechanism (e.g., by influencing tumor promotion). Tumor

promotion may be influenced by increases in cell proliferation rate via effects mediated through changes in proliferative signaling pathways, leading to enhanced transcription and DNA synthesis.

According to a series of papers, low level, low frequency, amplitude-modulated microwave radiation may affect intracellular activities of enzymes involved in neoplastic promotion without measurable influence on overall DNA synthesis. For example, a number of investigations showed some evidence of an effect on intracellular levels of ornithine decarboxylase (ODC) an enzyme implicated in tumor promotion. Tumor promoters increase ODC synthesis. Where such effects have been observed with microwave exposure, they have been much weaker and have occurred only for certain modulations of the carrier wave.

Assays of cell transformation were performed in order to detect changes consistent with carcinogenesis. For example, Balcer-Kubiczek and Harrison (1991) exposed cells to 120 Hz modulated microwave radiation followed by treatment with a phorbol ester tumor promoter. Cell transformation was induced in a dose-dependent way (increase with increasing SAR value). Overall, these results are in agreement with those from earlier studies, although there are also some inconsistencies. To date, the significance of these results is not clear in terms of *in vivo* carcinogenesis.

Along with investigations carried out *in vitro*, a number of *in vivo* investigations have also been performed. Of particular interest is, for example, the study conducted by Szmigielski et al (1983), who observed faster development of benzo(a)pyrene-induced skin tumors in mice that were exposed for some months to sub-thermal 2450 MHz microwave radiation.

Also of interest is a study where 100 rats were exposed from 2 to 27 months of age to pulsed microwave radiation (0.4 W kg^{-1}) (Guy et al, 1985). The exposed group had a significant increase in primary malignant lesions compared with the control group when lesions were pooled regardless of their location in the body, but no single type of malignant tumor was enhanced. Overall the incidence of primary malignancies was similar to that reported elsewhere in rats of this type. If the incidence of primary malignant lesions was pooled without regard to site or cause of death, however, the exposed group had a significantly higher incidence compared with the control group. Also, primary malignancies occurred early in the exposed group compared with the sham exposed group. While interesting, these data do not provide clear evidence of an increase in tumor incidence as result of microwave exposure. The incidence of benign tumors did not appear enhanced in the exposed group compared with the controls, nor was any particular type of neoplasm in the exposed group significantly elevated compared with the values reported in stock rats of this strain. Yet, overall, there was no clear evidence of an increase in tumor incidence as a result of exposure to microwave radiation.

In another study, the effects of exposure to electromagnetic fields were investigated in a rat brain glioma model. The exposure consisted of 915 MHz microwave radiation, both as continuous wave and ELF-modulated radiation (Salford, *et al*, 1993). The extensive

daily exposure did not cause tumor promotion. However, the experimental model has sometimes been questioned as the experimental animals had a high rate of spontaneous tumors. In another investigation in which cancer cells (B 16 melanoma) were injected into animals, a lack of effect of exposure to continuous wave and pulsed RFR on tumor progression was observed (Santini et al, 1988). Overall, evidence for a co-carcinogenic effect of microwave radiation on tumor progression is not substantiated. The few positive results which do exist are, however, sufficiently indicative to merit further investigation.

Repacholi et al (Repacholi, et al 1997) using Pim-I transgenic mice that are moderately predisposed to develop lymphoma spontaneously, conducted a more recent study of the co-carcinogenic potential of RFR. One hundred mice were exposed for two thirty-minute periods per day for up to 18 months to 900 MHz RFR with modulation characteristics and SAR similar to those of some wireless telephones. The mice exposed to RFR developed over twice as many lymphomas as the sham-exposed group of mice. A study of 50 Hz magnetic fields in these same transgenic mice conducted by the same investigators (Repacholi et al, 1998) did not result in greater numbers of lymphomas in the exposed mice, suggesting that the earlier positive result in RFR exposed mice is unlikely to be artifactual.

There is wide agreement within the international scientific community regarding the types of research needed to assess whether RFR from wireless communications poses a health risk to users. Research needs have been articulated by a number of groups, including the European Commission and the World Health Organization International EMF Project. Animal experiments are crucial because meaningful data will not be available from epidemiological studies for many years due to the long latency period between exposure to a carcinogen and the diagnosis of a tumor. Studies must also be performed in animals that are genetically predisposed to cancer and endpoints other than cancer, such as ocular damage and neurological effects, must also be examined. High priority must be given to replication of prior studies that indicate adverse effects, such as the transgenic mice model mentioned above. These research needs are similar to those identified by the VVEO EMF Project.

There is currently insufficient scientific basis for concluding either that wireless communication technologies are safe or that they pose a risk to millions of users. A significant research effort, including well-planned animal experiments, is needed to provide the basis to assess the risk to human health of wireless communications devices.

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STUDIES ON RADIOFREQUENCY RADIATION EMITTED BY CELLULAR PHONES

Year 2005

Personal (cellular) telecommunications is a rapidly evolving technology that uses microwave radiation to communicate between a fixed base station and a mobile user. Until recently, most systems employed analog technology where low frequency speech signals are directly modulated onto a high frequency carrier in a manner similar to a frequency-modulated (FM) radio. These second-generation systems, widely used in Europe, USA and Japan, employ digital technology where the low frequency speech is digitally coded prior to modulation. Most systems employ hand-held cellular telephones where the radiating antenna is close to the head of the user.

Over 100 million Americans currently use wireless communication devices with over 50 thousand new users daily. This translates into a potentially significant public health problem should the use of these devices even slightly increase the risk of adverse health effects. Cellular phones and other wireless communication devices are required to meet the *radiofrequency radiation* (RFR) exposure guidelines of the Federal Communications Commission (FCC, August 1996)¹. The existing exposure guidelines are based on protection from acute injury from thermal effects of RFR exposure. Current data are insufficient to draw definitive conclusions concerning the adequacy of these guidelines to be protective against any non-thermal effects of chronic exposures.

Studies in laboratory animals are considered crucial for understanding whether exposure to RFR is adverse to human health because meaningful data from epidemiological studies (human population studies) of cellular phone use will not be available for many years. This is due to the long latency period between exposure to a carcinogenic agent and the diagnosis of a tumor. Most scientific organizations that have reviewed the results from laboratory studies conducted to-date, however, have concluded that they are not sufficient to estimate potential human cancer risks from low-level RFR exposures and long-term, multi-dose, animal studies are needed.

Currently there is an international effort underway to develop and conduct long-term toxicology studies on the potential health effects associated with cellular phone RFR emissions. This effort includes studies by a consortium of European investigators and cellular phone manufacturers under the auspices of the European Union (PERFORM-A), and by investigators at the Cancer Research Center of the European Ramazzini Foundation of Oncology and Environmental Sciences Commission in Bologna, Italy.

What is the NTP Doing?

The Food and Drug Administration (FDA) nominated RFR emissions of wireless communication devices to the National Toxicology Program (NTP) for toxicology and carcinogenicity testing. The NTP has carefully evaluated the efforts already underway and concluded that while they have an excellent probability of producing high quality research results, additional studies may be warranted to more clearly define any potential health hazard to the U.S. population.

EXHIBIT 47

¹ FCC, Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation, 61FR41006 available at <http://www.fcc.gov/oet/dockets/et93-62/>

Because of the technical complexity of such studies, NTP staff is working with RFR experts from the National Institute of Standards and Technology (NIST). With support from the National Institute of Environmental Health Sciences of the National Institutes of Health, scientists at NIST have been testing the suitability of various RFR exposure systems for use in these studies. The studies at NIST have demonstrated the feasibility of using specially designed reverberation chambers as the exposure system to evaluate potential long-term health effects, including carcinogenicity, of cellular phone RFR in unrestrained laboratory animals. Based on the findings from NIST, the NTP designed studies to evaluate the potential toxicity and carcinogenicity of cell phone RFR in rats and mice exposed in reverberation chambers at the two frequencies (~900 and 1900 MHz) that are at the centers of the primary cellular bands used in the United States. In addition, these exposures will include the most common coding strategies for carrying information by cellular telephone communication technology in the United States: the Global System for Mobile Communications (GSM) and Code Division Multiple Access (CDMA) signal modulations. These studies will be conducted at multiple power levels and will include special emphasis on potential adverse effects in the brain. In addition to histopathological evaluations for toxic or neoplastic lesions, special studies will examine effects on the blood brain barrier, neonatal cell migration patterns in the brain, and DNA strand breaks in brain cells.

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BioInitiative Report:

A Rationale for a Biologically-based Public Exposure Standard for Electromagnetic Fields (ELF and RF)

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Setting Prudent Public Health Policy for Electromagnetic Field Exposures

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Abstract: Electromagnetic fields (EMF) permeate our environment, coming both from such natural sources as the sun and from manmade sources like electricity, communication technologies and medical devices. Although life on earth would not be possible without sunlight, increasing evidence indicates that exposures to the magnetic fields associated with electricity and to communication frequencies associated with radio, television, WiFi technology, and mobile cellular phones pose significant hazards to human health. The evidence is strongest for leukemia from electricity-frequency fields and for brain tumors from communication-frequency fields, yet evidence is emerging for an association with other diseases as well, including neurodegenerative diseases. Some uncertainty remains as to the mechanism(s) responsible for these biological effects, and as to which components of the fields are of greatest importance. Nevertheless, regardless of whether the associations are causal, the strengths of the associations are sufficiently strong that in the opinion of the authors, taking action to reduce exposures is imperative, especially for the fetus and children. Inaction is not compatible with the Precautionary Principle, as enunciated by the Rio Declaration. Because of ubiquitous exposure, the rapidly expanding development of new EMF technologies and the long latency for the development of such serious diseases as brain cancers, the failure to take immediate action risks epidemics of potentially fatal diseases in the future.

Keywords: leukemia, brain cancer, electricity, radiofrequency, cell phones, neurodegenerative diseases

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The evidence for elevated risk of childhood leukemia from exposure to power-line frequency EMF is weak and inconsistent

Only a small number of children are affected

The risk is low

The evidence that adult diseases are secondary to 50/60 Hz EMF exposure is insufficient

There is little evidence that low-intensity RF

fields pose human health hazards

There is no animal evidence

We do not know the mechanism

THE LEVELS OF PROOF AND STANDARDS OF EVIDENCE FOR DECISION-MAKING DIFFER AMONG PROFESSIONS

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Fig. 4: A public health-based response must be relative to the magnitude of the potential impact of inaction. When the potential impact is high, action should be taken even when the evidence of risk is low.

DEFINING NEW EXPOSURE STANDARDS FOR ELF AND RF ELECTROMAGNETIC FIELDS BASED ON THE PRECAUTIONARY PRINCIPLE

The most contentious issue regarding public and occupational exposures to ELF involves the resolute adherence by many countries to the existing International Commission on Non-Ionizing Radiation Protection (ICNIRP) standards /119/ of 1,000 mG (100 μ T), in face of the growing scientific evidence of health risks at far lower levels. The basis on which most standard setting agencies justify their failure to set new safety limits for ELF and RF is nearly always that no certain proof of harm from exposure and no known mechanism of action have been presented. A demand for a causal level of evidence and scientific certainty is implicit in nearly all discussion on what are the appropriate safety standards for ELF and RF. This demand, however, runs counter to both the existing scientific evidence and good public health practice.

Two obvious factors work against governments

taking action to set exposure guidelines based on current scientific evidence of risk:

- Contemporary societies are very dependent upon electricity usage and RF communications, and anything that restricts current and future usage potentially has serious economic consequences.
- Power and communications industries have enormous political clout, and even provide support for a significant fraction of the research done on EMF.

This state of affairs results in legislation that protects the status quo and scientific publications whose conclusions are not always based only on the observations of the research. This situation also hinders wise public health policy actions and the implementation of prevention strategies because of the huge financial investments already made in these technologies. Huss et al. /120/ analyzed 59 studies of the health effects of cell phone use and found that studies funded exclusively by industry

EXHIBIT 50

were least likely to report a statistically significant result.

Substantial evidence indicates that ELF is carcinogenic at levels of exposure in the 2 mG to 5 mG (0.2-0.5 μ T) range and above. ICNIRP and other standards that place public exposure limits as high as 1,000 mG (100 μ T) are outdated and should be replaced, based on the evidence presented above. New standards are warranted now, based on the totality of scientific evidence, the risks of taking no-action, the large population at risk, the costs associated with ignoring the problem in new and upgraded site selection and construction, and the loss of public trust by ignoring the problem. New exposure limits must be developed for ELF-EMF based on the clear sufficiency of evidence for carcinogenicity to humans at levels that are routinely approved today for occupancy by children, pregnant women, and others. To wait any longer to adopt new public safety limits for ELF is not prudent public health policy. Such limits should reflect the exposures that are commonly associated with increased risk of childhood leukemia (in the 2 to 5 mG (0.2-0.5 μ T) range for all children, and over 1.4 mG (0.14 μ T) for children age 6 and younger.

Defining a new exposure standard for RF is complex, if we are to address properly new scientific results for chronic exposure to pulsed radiofrequency (for example from cell towers, cell phones, and other wireless technologies). Whereas the evidence of serious harm is strong, knowledge regarding the relation between cumulative exposure and risk of disease is inadequate. Uncertainty about how low such standards might have to go to be prudent from a public health standpoint should not prevent reasonable efforts to respond to the information at hand. No lower limit for bio-effects and adverse health effects from RF have been established, and no assertion of safety at any level of wireless exposure (chronic exposure) can be made at this time. A major concern is the exposure of children. We strongly recommend that wired alternatives to WI-FI be implemented particularly

in schools and libraries so that children will not be subjected to elevated RF levels until more is understood about possible health impacts.

The Bioinitiative Report /121/ presents a much more extensive and exhaustive discussion of the literature on health effects of both ELF and RF EMF than can be presented here. The Report contains a recommendation of an RF standard of 0.1 μ W/cm², but with the full knowledge that hazards may be associated with even lower exposures.

This review has focused on those diseases for which the evidence of increased risk with EMF exposure is the strongest. Other biological effects and potential health outcomes are presented in detail in the Bioinitiative Report /121/. The effects that drive the need for immediate action in lowering exposure are cancer and neurodegenerative diseases. Leukemia appears the cancer of greatest concern when the exposure to either ELF or RF is over the whole body, as is the case with most ELF exposures and exposure from RF towers. When exposure is focused on a part of the human body, such as is the case of the head in cell phone use, one sees cancers of the brain, acoustic nerve, or parotid gland. For these diseases, the evidence is clearly sufficient to warrant regulatory changes in public safety limits now, at levels that are widely reported to be associated with increased risk of childhood leukemia and brain tumors. Exposure limits against these diseases will also likely be protective for other less-well-defined health impacts. The BioInitiative Report /121/ provides additional justification for the adoption of these levels to prevent the health hazards resulting from exposure to ELF and RF.

CONCLUSIONS

The evidence for hazards to human health from both ELF and RF EMF is sufficiently strong as to merit immediate steps to reduce exposure. Such a reduction can best be achieved by setting exposure goals that are lower than levels known to be

associated with disease, even while understanding that these exposure goals are significantly lower than many current exposures. A reasonable approach would be a 1 mG (0.1 μ T) planning limit for structures adjacent to all new or upgraded power lines, and for occupied space that affects sensitive receptors (homes, schools, day-care, pre-school, etc), and targets not to exceed 2 mG (0.2 μ T) for all other occupied new construction. Although reconstructing all existing electrical distributions systems is not realistic, steps to reduce exposure from these existing systems should be encouraged. For RF EMF, setting a level with certainty is difficult. A precautionary action level would reasonably be 0.1 μ W/cm².

The proposals presented here reflect the evidence that a positive assertion of safety cannot be made with respect to chronic exposure to low-intensity levels of ELF and RF radiation.

As with many other standards for environmental exposures, even these proposed limits may not be completely protective, but more-stringent standards are not realistic at the present time.

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The Influence of Being Physically Near to a Cell Phone Transmission Mast on the Incidence of Cancer

Horst Eger, Klaus Uwe Hagen, Birgitt Lucas, Peter Vogel, Helmut Voit

Published in *Umwelt-Medizin-Gesellschaft* 17,4 2004, as:
'Einfluss der räumlichen Nähe von Mobilfunksendeanlagen auf die Krebsinzidenz'

Summary

Following the call by Wolfram König, President of the Bundesamt für Strahlenschutz (Federal Agency for radiation protection), to all doctors of medicine to collaborate actively in the assessment of the risk posed by cellular radiation, the aim of our study was to examine whether people living close to cellular transmitter antennas were exposed to a heightened risk of taking ill with malignant tumors.

The basis of the data used for the survey were PC files of the case histories of patients between the years 1994 and 2004. While adhering to data protection, the personal data of almost 1,000 patients were evaluated for this study, which was completed without any external financial support. It is intended to continue the project in the form of a register.

The result of the study shows that the proportion of newly developing cancer cases was significantly higher among those patients who had lived during the past ten years at a distance of up to 400 metres from the cellular transmitter site, which has been in operation since 1993, compared to those patients living further away, and that the patients fell ill on average 8 years earlier.

In the years 1999-2004, *ie* after five years' operation of the transmitting installation, the relative risk of getting cancer had trebled for the residents of the area in the proximity of the installation compared to the inhabitants of Naila outside the area.

Key words: cellular radiation, cellular transmitter antennas, malignant tumours

The rapid increase in the use of mobile telephony in the last few years has led to an increasing number of cell phone transmission masts being positioned in or near to residential areas. With this in mind, the president of the German governmental department for protection against electromagnetic radiation (Bundesamtes für Strahlenschutz) Wolfram König, has challenged all doctors to actively help in the work to estimate the risks from such cell phone masts. The goal of this investigation was therefore to prove whether or not people living near to cell phone masts have a higher risk of developing cancerous tumours.

The basic data was taken from the medical records held by the local medical authority (Krankenkasse) for the years 1994 to 2004. This material is stored on computer. In this voluntary study the records of roughly 1,000 patients from Naila (Oberfranken) were used, respecting the associated data protection laws. The results from this study show a significantly increased likelihood of developing cancer for the patients that have lived within 400 metres of the cell phone transmission mast (active since 1993) over the last ten years, in comparison to those patients that live further away. In addition, the patients that live within 400 metres tend to develop the cancers at a younger age. For the years 1999 to 2004 (*ie* after

five or more years of living with the cell phone transmission mast), the risk of developing cancer for those living within 400 metres of the mast in comparison to those living outside this area, was three times as high.

Introduction

A series of studies available before this investigation provided strong evidence of health risks and increased cancer risk associated with physical proximity to radio transmission masts. Haider *et al.* reported in 1993 in the Moosbrunn study frequent psychovegetative symptoms below the current safety limit for electromagnetic waves (1). In 1995, Abelin *et al.* in the Swiss- Schwarzenburg study found dose dependent sleep problems (5:1) and depression (4:1) at a shortwave transmitter station that has been in operation since 1939 (2).

In many studies an increased risk of developing leukaemia has been found; in children near transmitter antennas for Radio and Television in Hawaii (3); increased cancer cases and general mortality in the area of Radio and Television transmitter antennas in Australia (4); and in England, 9 times more leukaemia cases were diagnosed in people who live in a nearby

area to the Sutton Coldfield transmitter antennas (5). In a second study, concentrating on 20 transmitter antennas in England, a significant increased leukaemia risk was found (6). The Cherry study (7) indicates an association between an increase in cancer and living in proximity to a transmitter station. According to a study of the transmitter station of Radio Vatican, there were 2.2 times more leukaemia cases in children within a radius of 6 km, and adult mortality from leukaemia also increased (8).

In 1997 Goldsmith published the Lilienfeld-study that indicated 4 times more cancer cases in the staff of the American Embassy in Moscow following microwave radiation during the cold war. The dose was low and below the German limit (9).

The three studies of symptoms indicated a significant correlation between illness and physical proximity to radio transmission masts. A study by Santini *et al.* in France resulted in an association between irritability, depression, dizziness (within 100m) and tiredness within 300m of a cell phone transmitter station (10).

In Austria there was an association between field strength and cardiovascular symptoms (11) and in Spain a study indicates an association between radiation, headache, nausea, loss of appetite, unwellness, sleep disturbance, depression, lack of concentration and dizziness (12).

The human body physically absorbs microwaves. This leads to rotation of dipole molecules and to inversion transitions (13), causing a warming effect. The fact that the human body transmits microwave radiation at a very low intensity means that since every transmitter represents a receiver and transmitter at the same time, we know the human body also acts as a receiver.

In Germany, the maximum safe limit for high frequency microwave radiation is based on purely thermal effects. These limits are one thousand billion times higher than the natural radiation in these frequencies that reaches us from the sun.

The following study examines whether there is also an increased cancer risk close to cellular transmitter antennas in the frequency range 900 to 1800 MHz. Prior to this study there were no published results for long-term exposure (10 years) for this frequency range and its associated effects to be revealed. So far, no follow-up monitoring of the state of health of such a residential population has been systematically undertaken.

Materials and Methods

Study area

In June 1993, cellular transmitter antennas were permitted by the Federal Postal Administration in the Southern German city of Naila and became operational in September 1993.

The GSM transmitter antenna has a power of 15 dBW per channel in the 935MHz frequency range. The total



Fig. 1: Schematic plan of the antenna sites

transmission time for the study period is ca. 90,000 hours. In December 1997 there followed an additional installation from another company. The details are found in an unpublished report, appendix page 1-3 (14).

To compare results an 'inner' and 'outer' area were defined. The inner area covered the land that was within a distance of 400 metres from the cellular transmitter site. The outer area covered the land beyond 400 metres. The average distance of roads surveyed in the inner area (nearer than 400m) was 266m and in the outer area (further than 400m) 1,026m. Fig. 1 shows the position of the cellular transmitter sites (560m) are the highest point of the landscape, which falls away to 525m at a distance of 450m. From the height and tilt angle of the transmitter it is possible to calculate the distance where the transmitter's beam of greatest intensity strikes the ground (see Fig. 2).

The highest radiation values are in areas of the main

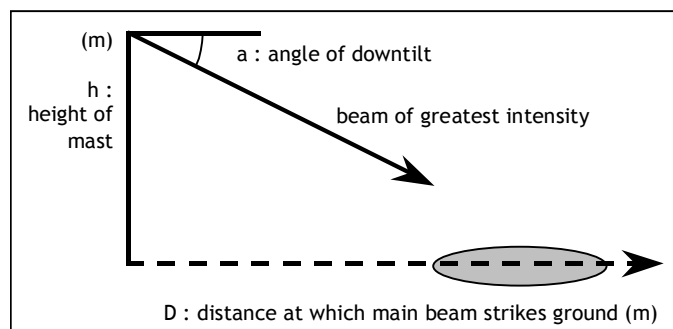


Fig. 2: From the mast height h and the downtilt angle a , the distance D at which the main beam reaches ground is given by $D = \tan(90-a) \times h$

beam where it hits the ground and from the expected associated local reflection; from this point the intensity of radiation falls off with the square of the distance from the transmitter.

In Naila the main beam hits the ground at 350m with a beam angle of 6 degrees (15). In the inner area, additional emissions are caused by the secondary lobes of the transmitter; this means in comparison that from purely mathematical calculations the outer area has significantly reduced radiation intensity.

The calculations from computer simulations and the measurements from the Bavaria agency for the environmental protection, both found that the intensity of radiation was a factor of 100 higher in the inner area as compared to the outer area. The measurements of all transmitter stations show that the intensity of radiation from the cell phone transmitter station in Naila in the inner area was higher than the other measurement shown in the previous studies of electromagnetic fields from radio, television or radar (14).

The study StSch 4314 from the ECOLOG Institute indicates an association between a vertical and horizontal distance from the transmitter station and expected radiation intensity on the local people (16). The reason for setting a distance of 400m for the differentiation point is partly due to physical considerations, and partly due to the study of Santini *et al.* who chose 300m (10).

Data Gathering

Similar residential streets in the inner area and outer areas were selected at random. The large old people's home in the inner area was excluded from the study because of the age of the inhabitants. Data gathering covered nearly 90% of the local residents, because all four GPs in Naila took part in this study over 10 years. Every team researched the names of the patients from the selected streets that had been ill with tumours since 1994. The condition was that all patients had been living during the entire observation time of 10 years at the same address.

The data from patients was handled according to data protection in an anonymous way. The data was evaluated for gender, age, tumour type and start of illness. All cases in the study were based on concrete results from tissue analysis. The selection of patents for the study was always done in exactly the same way. Self-selection was not allowed. Also the subjective opinion of patients that the radio mast detrimentally affected their health has not affected this study. Since patients with cancer do not keep this secret from GPs, it was possible to gain a complete data set.

Population study

In the areas where data was collected 1,045 residents were registered in 31.12.2003. The registration statistics for Naila at the beginning of the study (1.1.1994) show the number of old people in the inner and outer areas, as shown in Table 1. The average age at the beginning

	female	male	total
Inner area	41.48	38.70	40.21
Outer area	41.93	38.12	40.20
Naila total	43.55	39.13	41.45

Table 1 : Overview of average ages at the beginning of the study in 1994

1994	inner 22.4%	outer 2.8%	Naila total 24.8%
2004	inner 26.3%	outer 26.7%	

Table 2 : Proportion of patients aged over 60

of the study (1.1.1994) in both the inner and outer areas was 40.2 years. In the study period between 1994-2004, 34 new cases of cancer were documented out of 967 patients (Table 3). The study covered nearly 90% of local residents.

The average age of the residents in Naila is one year more than that of the study due to the effects of the old people's home. From the 9,472 residents who are registered in Naila, 4,979 (52.6%) are women and 4,493 (47.4%) are men. According to the register office, in 1.1.1994 in the outer area, the percentage was 45.4% male and 54.5% female, and in the inner area 45.3% male and 54.6% female. The number of people who are over 60 years old is shown in Table 2.

The social differences in Naila are small. Big social differences like in the USA do not exist here. There is also no ethnic diversity. In 1994 in Naila the percentage of foreigners was 4%. Naila has no heavy industry, and in the inner area there are neither high voltage cable nor electric trains.

Results

Results are first shown for the entire 10 year period from 1994 until 2004. Secondly, the last five-year period 1999 to 2004 is considered separately.

Period 1994 to 2004

As a null hypothesis it was checked to see if the physical distance from the mobile transmission mast had no effect on the number cancer cases in the selected population, *ie* that for both the group nearer than 400 metres and the group further than 400 metres the chance of developing cancer was the same. The relative frequencies of cancer in the form of a matrix are shown in Table 3. The statistical test method used on this data was the chi-squared test with Yates's correction. Using this method we obtained the value of 6.27, which is over the critical value of 3.84 for a

Period 1994-2004	Inner area	Outer area	total
new cases of cancers	18	16	34
with no new cancer	302	631	933
total	320	647	967

Table 3 : numbers of patients with and without cancers, 1994-2004

statistical significance of 0.05).

This means the null hypothesis that both groups within the 400-metre radius of the mast and beyond the 400 metre radius, have the same chance of developing cancer, can be rejected with a 95% level of confidence. With a statistical significance of 0.05, an even more significant difference was observed in the rate of new cancer cases between the two groups.

Calculating over the entire study period of 1994 until 2004, based on the incidence matrix (Table 3) we arrive at a relative risk factor of 2.27 (quotient of proportion for each group, eg 18/320 in the strongly exposed inner area, against 16/647 in the lower exposed comparison group). If expressed as an odds ratio, the relationship of the chance of getting cancer between strongly exposed and the less exposed is 2.35.

The following results show clearly that inhabitants who live close to transmitter antennas compared to inhabitants who live outside the 400m zone, double their risk of developing cancer. In addition, the average age of developing cancer was 64.1 years in the inner area whereas in the outer area the average age was 72.6 years, a difference of 8.5 years. That means during the 10 year study that in the inner area (within 400 metres of the radio mast) tumours appear at a younger age.

In Germany the average age of developing cancer is approximately 66.5 years, among men it is approximately 66 and among women, 67 (18).

Over the years of the study the time trend for new cancer cases shows a high annual constant value (Table 4). It should be noted that the number of people in the inner area is only half that of the outer area, and therefore the absolute numbers of cases is smaller.

Table 7 shows the types of tumour that have developed in the cases of the inner area.

Period 1994 to 1999

No. of cases of tumours per year of study	inner area: of the 320 people		outer area: of the 647 people	
	total cases	per 1,000	total cases	per 1,000
1994	—	—	I	1.5
1995	—	—	—	—
1996	II	6.3	I	1.5
1997	I	3.1	III	4.6
1998	II	6.3	III	4.6
1999	II	6.3	I	1.5
2000	IIII	15.6	I	1.5
2001	II	6.3	II	3.1
2002	II	6.3	II	3.1
2003-3/2004	II	6.3	II	3.1

Table 4 : Summary of the total tumours occurring per year (no. and per thousand)

Period 1994-1999	Inner area	Outer area	total
new cases of cancers	5	8	13
with no new cancer	315	639	954
total	320	647	967

Table 5 : numbers of patients with and without cancers, 1994-1999

For the first five years of the radio transmission mast operation (1994-1998) there was no significant increased risk of getting cancer within the inner area as compared to the outer area (Table 5).

Period 1999 to 2004

Under the biologically plausible assumption that cancer caused by detrimental external factors will require a time of several years before it will be diagnosed, we now concentrate on the last five years of the study between 1999 and 2004. At the start of this period the transmitter had been in operation for 5 years. The results for this period are shown in Table 6. The chi-squared test result for this data (with Yates's correction) is 6.77 and is over the critical value of 6.67 (statistical significance 0.01). This means, with 99% level of confidence, that there is a statistically proven difference between development of cancer between the inner group and outer group. The relative risk of 3.29 revealed that there was 3 times more risk of developing cancer in the inner area than the outer area during this time period.

Period 1999-2004	Inner area	Outer area	total
new cases of cancers	13	8	31
with no new cancer	307	639	946
total	320	647	967

Table 6 : numbers of patients with and without cancers, 1999-2004

The odds-ratio 3.38 (VI 95% 1.39-8.25, 99% 1.05-10.91) allows us with 99% confidence to say that the difference observed here is not due to some random statistical effect.

Discussion

Exactly the same system was used to gather data in the inner area and outer areas. The medical chip card, which has been in use for 10 years, enables the data to be processed easily. The four participating GPs examined the illness of 90% of Naila's inhabitants over the last 10 years. The basic data for this study were based on direct examination results of patients extracted from the medical chip cards, which record also the diagnosis and treatment. The study population is (in regards to age, sex and cancer risk) comparable, and therefore statistically neutral. The study deals only with people who have been living permanently at the same address for the entire study period and therefore

Type of tumour (organ)	no. of tumours found	total expected	incidence per 100,000	ratio inner: outer
breast	8	5.6	112	5:3
ovary	1	1.1	23	0:1
prostate	5	4.6	101	2:3
pancreas	m 3 f 2	0.6 0.9	14 18	2:1 1:1
bowel	m 4 f 0	3.7 4.0	81 81	2:2 0:0
skin melanoma	m 1 f 0	0.6 0.7	13 14	1:0 0:0
lung	m 3 f 0	3.6 1.2	79 24	2:1 0:0
kidney	m 2 f 1	1.0 0.7	22 15	1:1 1:0
stomach	m 1 f 1	1.2 1.1	27 23	0:1 0:1
bladder	m 1 f 0	2.0 0.8	44 16	0:1 0:0
blood	m 0 f 1	0.6 0.7	14 15	0:0 1:0

Table 7 : Summary of tumours occurring in Naila, compared with incidence expected from the Saarland cancer register

have the same duration of exposure regardless of whether they are in the inner area or outer area.

The result of the study shows that the proportion of newly developing cancer cases was significantly higher ($p < 0.05$) among those patients who had lived during the past ten years within a distance of 400 metres from the cellular transmitter site, which has been in operation since 1993, in comparison to people who live further away. Compared to those patients living further away, the patients developed cancer on average 8.5 years earlier. This means the doubled risk of cancer in the inner area cannot be explained by an average age difference between the two groups. That the transmitter has the effect that speeds up the clinical manifestations of the illness and general development of the cancer cannot be ruled out.

In the years 1999-2004, *ie* after five years and more of transmitter operation, the relative risk of getting cancer had trebled for the residents of the area in the proximity of the mast compared to the inhabitants of Naila in the outer area ($p > 0.01$). The division into inner area and outer area groups was clearly defined at the beginning of the study by the distance to the cell phone transmission mast. According to physical considerations people living close to cellular transmitter antennas were exposed to heightened transmitted radiation intensity.

Both calculated and empirical measurements revealed that the intensity of radiation is 100 times higher in the inner area compared to the outer area. According to the research StSch 4314 the horizontal and vertical position in regards to the transmitter antenna is the most important criterion in defining the radiation intensity area on inhabitants (16).

The layered epidemiological assessment method used in this study is also used in assessment of possible chemical environmental effects. In this case the layering is performed in regards to the distance from the cell phone transmitter station. Using this method it has been shown that there is a significant difference in probability of developing new cancers depending on the exposure intensity.

The number of patients examined was high enough according to statistical rules that the effects of other factors (such as use of DECT phones) should be normalised across the inner area and outer area groups. From experience the disruption caused by a statistical confounding factor is in the range between 20% and 30%. Such a factor could therefore in no way explain the 300% increase in new cancer cases. If structural factors such as smoking or excessive alcohol consumption are unevenly distributed between the different groups this should be visible from the specific type of cancers to have developed (*ie* lung, pharyngeal or oesophageal). In the study inner area there were two lung cancers (one smoker, one non-smoker), and one in the outer area (a smoker), but no oesophageal cancers. This rate of lung cancer is twice what is statistically to be expected and cannot be explained by a confounding factor alone. None of the patients who developed cancer was from a family with such a genetic propensity.

Through the many years experience of the GPs involved in this study, the social structures in Naila are well known. Through this experience we can say there was no significant social difference in the examined groups that might explain the increased risk of cancer.

The type and number of the diagnosed cancers are shown in Table 7. In the inner area the number of cancers associated with blood formation and tumour-controlling endocrine systems (pancreas), were more frequent than in the outer area (77% inner area and 69% outer area).

From Table 7, the relative risk of getting breast cancer is significantly increased to 3.4. The average age of patients that developed breast cancer in the inner area was 50.8 years. In comparison, in the outer area the average age was 69.9 years, approximately 20 years less. In Germany the average age for developing breast cancer is about 63 years. The incidence of breast cancer has increased from 80 per 100,000 in the year 1970 to 112 per 100,000 in the year 2000. A possible question for future research is whether breast cancer can be used as a 'marker cancer' for areas where there is high contamination from electromagnetic radiation. The report of Tynes *et al.* described an increased risk of breast cancer in Norwegian female radio and telegraph operators (20).

To further validate the results the data gathered were compared with the Saarland cancer register (21). In this register all newly developed cancers cases since 1970 are recorded for each Bundesland. These data are accessible via the Internet. Patients that suffer two separate tumours were registered twice, which increases the overall incidence up to 10%. In this

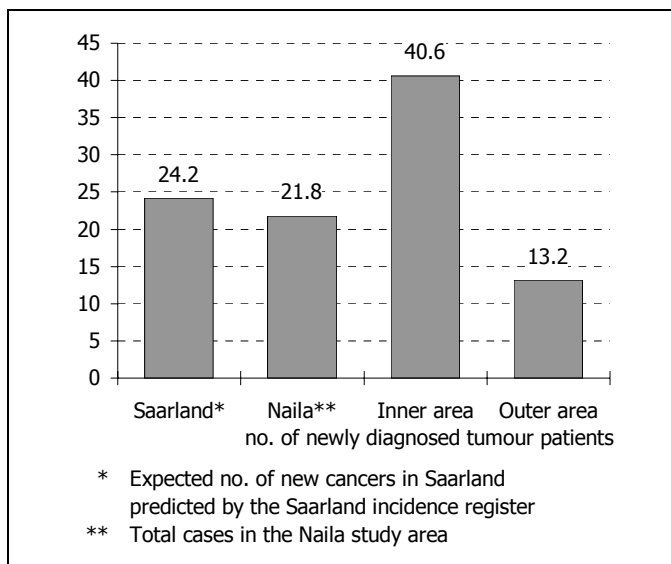


Fig. 3 : Number of new cancer cases 1999 to 2004, adjusted for age and gender, calculated for the 5,000 patient years

register there is no location-specific information, for instance proximity to cell phone transmission masts. The data in the cancer register therefore reflect no real control group but rather the effect of the average radiation on the total population.

From the Saarland cancer register for the year 2000 the incidence of new cancer cases was 498 per 100,000 for men and 462 per 100,000 for women. When adjusted for age and sex one would expect a rate of between 480 and 500 per 100,000 in Naila. For the years 1999 to 2004 there were 21 new cases of cancer among 967 patients. The expected number was 24 cases per 1,000 patients.

The results of the study are shown graphically in Fig. 3. The bars of the chart represent the number of new cancer cases per 1,000 patients in the separate areas, over the five years (bars 2 to 4). The first bar represents the expected number from the Saarland cancer register.

In spite of a possible underestimation, the number of newly developed cancer cases in the inner area is more than the expected number taken from the cancer register, which represents the total population being irradiated. The group who had lived during the past five years within a distance of 400 m from the cellular transmitter have a two times higher risk of developing cancer than that of the average population. The relative risk of getting cancer in the inner area compared with the Saarland cancer register is 1.7 (see to Table 7).

Conclusion

The result of this retrospective study in Naila shows that the risk of newly developing cancer was three times higher among those patients who had lived during past ten years (1994-2004), within a distance of 400m from the cellular transmitter, in comparison to those who had lived further away.

Cross-sectional studies can be used to provide the decisive empirical information to identify real problems. In the 1960s just three observations of birth deformities were enough to uncover what is today an academically indisputable Thalidomide problem.

This study, which was completed without any external financial support is a pilot project. Measurements of individual exposure as well as the focused search for further side effects would provide a useful extension to this work, however such research would need the appropriate financial support.

The concept of this study is simple and can be used everywhere, where there it a long-term electromagnetic radiation from a transmitting station.

The results presented are a first concrete epidemiological sign of a temporal and spatial connection between exposure to GSM base station radiation and cancer disease.

These results are, according to the literature relating to high frequency electromagnetic fields, not only plausible and possible, but also likely.

From both an ethical and legal standpoint it is necessary to immediately start to monitor the health of the residents living in areas of high radio frequency emissions from mobile telephone base stations with epidemiological studies. This is necessary because this study has shown that it is no longer safely possible to assume that there is no causal link between radio frequency transmissions and increased cancer rates.

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Footnotes

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Exhibit 52

Research and Statements on RF Radiation Safety and Children

- A. Web page - Healthy Schools Network *amicus curiae* brief in support of appeal to the U.S. Supreme Court in 06-175 *In Re Maria Gonzalez* found at:
www.emrpolicy.org/litigation/case_law/docs/5sep06_amicus_hsn.pdf
- B. P. 1 - “Electromagnetic Fields and the Public: EMF Standards and Estimation of Risk.” Presented at the November 2007 Royal Society scientific conference in London by Prof. Yuri Grigoriev, Chairman of the Russian National Committee on Non-Ionizing Radiation Protection, Federal Medical Biophysical Centre, Moscow, Russia.
- C. P. 8 - Open Letters to Parents, Teachers, School Boards. Regarding WiFi Networks in Schools. Statement in response to a request for information about Wi-Fi systems in schools. Dr. Magda Havas, B.Sc. Ph.D., Associate Professor of Environmental & Resource Studies, Trent University, Peterborough, Ontario, Canada.

Electromagnetic Fields and the Public: EMF Standards and Estimation of Risk

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Electromagnetic conditions in the environment have changed greatly within the past 15 years. This is in part due to the introduction of mobile telecommunication systems, which have essentially changed the degree of electromagnetic exposure members of the general public are exposed regularly to.

Completely new electromagnetic exposure regime for the population

Mobile communication is a completely new and additional source of electromagnetic exposure for the population. Standard daily mobile phone use is known to increase RF-EMF (radiofrequency electromagnetic field) exposure to the brains of users of all ages, whilst base stations can regularly increase the exposures of large numbers of the population to RF-EMF radiation in everyday life. The need to determine appropriate standards stipulating the maximum acceptable short-term and long-term RF-EMF levels encountered by the public, *and* set such levels as general guidelines are of great importance in order to help preserve the general public's health and that of the next generation. We do not have the right to make mistakes on such a major issue through complacency.

The Russian RF-EMF standards

First of all, it is necessary to provide background information to the reader on the Russian National Committee on Non-Ionizing Radiation Protection (RNCNIRP). The RNCNIRP was created 11-years ago (1997) at the Russian Academy of Medical Science (RAMS) within the framework of the Russian Scientific Commission on Radiation Protection (RSCRП). RSCRП acts as the overseer of the RNCNIRP.

The RNCNIRP employs 40 specialists, of whom 38 are qualified scientists, and 2 members are representatives of the Ministry of Health. The RNCNIRP is an independent scientific organization which does not accept financial sponsorship. The decisions of RNCNIRP are considered as recommendations, and are considered by the Ministry of Health of the Russian Federation when it is setting standards.

Mandatory compliance is required with regard to the Sanitary Provisions and Ecological Norms (SanPiN) guidelines set by the Ministry of Health of the Russian Federation. The latest RF-EMF SanPiN 2.1.8/2.2.4.1190-03 (safety standard) on mobile

Exhibit 52-B

communications was issued by the Ministry of Health of the Russian Federation in 2003. This decreed that the maximum permissible exposure level for RF-EMF over the frequency range of 300 MHz – 300 GHz in the Russian Federation is $10 \mu\text{W}/\text{cm}^2$ ($0.1 \text{ W}/\text{m}^2$). This SanPiN also recommended that: “Use of mobile telecommunication devices should be restricted for those under 18 or pregnant”.

Characteristic conceptions on Russian and foreign standards

For the development of appropriate standards that take health and wellbeing into account; it appears necessary to formulate the hygiene hypothesis as follows, “The hygienic standards are for the protection of the population, taking into account factors potentially harmful to health, and with the obligation of taking into account typical prevalence of these factors in the general population”.

International standards

Let us consider existing international standards and how these standards conform to this postulate. Presently international standards are determined by ICNIRP, IEEE, CENELEC and other national and international commissions. The first three organisations mentioned determined the basis for their standards some years ago, and continue to propose RF-EMF guidelines that only take into account thermal, acute and pathological effects (ICNIRP Guidelines 1998, IEEE Standard C95.1-2005, CENELEC EN 50166-2:2000). Unfortunately, these RF-EMF standards do little to provide protection for the general population.

Let's consider international standards and likely exposures. The population is not typically exposed to thermal levels in the workplace or in everyday life. The establishment of a proposed threshold level for pathological effects makes the assumption that compensative or adaptive reactions will occur in an organism. However we strongly disagree with this assumption. Whilst people very rarely receive acute exposures in everyday life, all populations in the world are chronically exposed on a daily basis to low levels of RF-EMF and standards have to be set accordingly.

There are no publications that present ways of extrapolating from the various existing standards recommendations to properly assess real environmental conditions for the population. There are currently no proposals on how to estimate danger by using existing international standards recommendations: from acute influences to chronic exposure, and from thermal levels to non-thermal levels.

Methodology used to create standards in Russia (and the USSR - former Soviet Union)

In Russia the principles are based on additional factors found during actual EMF exposure of the population:

- Non-thermal levels
- Chronic exposure
- An establishment of “working level“, instead of threshold level. Consideration of the presence of adaptation processes in a chronic exposure instead of a direct pathological effect.

Database for standardisation: results of the research undertaken in industrial settings (1950 onwards – *almost 60 years of data*) and chronic exposure experiments, etc. The necessity of developing standards for children, as new risk group, is also recognised.

The potential health risk for children is very high and creates a completely new problem we need to address. *"Children are different from adults. Children have a unique vulnerability. As they grow and develop, there are "windows of susceptibility": periods when their organs and systems maybe particularly sensitive to the effect of certain environmental threats"* (WHO, 2003).

Modern children will use mobile phones for a longer overall period than adults of the present generation because they have started to use mobile phones at an earlier age and will continue to use them when they become adults. It is impossible to use data obtained on adults as an accurate predictor for effects on children. It is therefore necessary to develop standards which take into consideration localised head/brain exposures and undertake corresponding research. There are presently no studies investigating the effects of chronic RF-EMF exposure to the head/brain area, which takes into account investigation of the possible effects of such exposures in the developing brain.

Thermal and non-thermal effects.

There is denial by many western scientists into the possibility of detrimental non-thermal RF-EMF effects, which has resulted in consequence in an underestimation of the dangers that can exist to the health of the population through different degrees of exposure. However there is a very large number of publications on the biological effects of low level RF-EMF.

For example:

- *BioInitiative Report* (Blackman et al. 2007) – authored by 14 respected scientists from five countries (Austria, China, Denmark, Sweden, USA).
- The Stewart Report, UK (2000) and of other national committees and scientific forums.
- Numerous publications by Russian scientists (earlier - USSR).
- Bordeaux-Moscow project: - results of confirmation studies of the Russian data on immunological effects of microwaves.

The general conclusions of confirmation studies on Russian data on the immunological effects of microwaves undertaken in the Bordeaux-Moscow project are as follows:

1. The study was conducted using the methodology of the original experiments conducted in the USSR (Vinogradov & Dumansky 1974, 1975, Shandala & Vinogradov 1982) and the agreed Protocol of the Bordeaux-Moscow Project on “Confirmation studies of the Russian data on immunological effects of microwaves” (Statement of work, 2006). Autoimmunity was evaluated using the original methodology, developed in the USSR (Vinogradov & Dumansky 1974, 1975, Shandala & Vinogradov 1982). This original

methodology was a complement fixation test (CFT), however, our study was expanded to include modern ELISA test, and was conducted additionally in accordance with WHO recommendations on EMF biological research.

2. The results of our immunology study [\[full reference required\]](#) using the CFT and ELISA tests generally confirmed the results of Soviet research groups on the possible induction of autoimmune responses (formation of antibodies in brain tissues) and stress-reactions from long-term *non-thermal* levels of RF exposure (30-day exposures for 7 hours daily for 5 days per week at a power density of 5 W/m²).

3. The results of our teratology study (*study investigating possible causes and biological processes that may lead to birth defects and abnormal development, and possible mitigative measures to prevent such occurrences*) [\[full reference required\]](#) testing the blood serum of RF-EMF exposed rats (30-day exposures for 7 hours daily for 5 days per week at a power density of 5 W/m²), suggest possible adverse effects on pregnancy, foetal and postnatal development in agreement with the earlier results of Shandala & Vinogradov (1982).

***Unsolved problems in estimating RF-EMF danger
new conditions - new problems:***

- Problem of accumulation of effect. Remote somatic effects and cancer.
- Problem of adaptation.
- Estimation of the influence of simultaneous exposure to various frequencies.
- Estimation of the role of signal modulation.
- Coordination of the criterion to establish a threshold or appropriate “working level”.
- Changing reactivity and appearance of electromagnetic hypersensitivity.
- Modulation and bioeffects

The analysis of 28 biological experiments conducted *in vitro*, *in situ*, and *in vivo* by the present author from 1975 onwards in the former Soviet Union and later in Russia using modulated RF-EMF allows the following basic conclusions to be made:

- Exposure of bio-systems to EMF with higher or lower composite regimens of modulation can lead to the possible development of both physiological and unfavorable bio-effects, which are distinct from the bio-effects induced by non-modulated EMF;
- acute exposure to low intensities of modulated EMF (at non-thermal levels) can result in development of pathological effects;
- there is a dependence of development of a reciprocal biological response on the intensity and directness of the concrete regimen of EMF modulation; this dependence was fixed at all levels of biological systems — *in vitro*, *in situ* and *in vivo*;
- as a rule, modulated EMF invoked more recognisable bioeffects than continuous EMF regimes.

Guaranteeing good health for the population - Our conclusion

1. The present scientific thinking and basis used in many instances for developing suitable RF-EMF standards does not correspond realistically to modern conditions of RF-EMF exposure as experienced by members of the public (both through generalised exposures and through direct use of mobile communication systems).

2. From what we now know existing safety standards (both foreign and Russian) have become outdated. Modern accumulative RF-EMF exposures have also increased considerably from that found in the past, thereby increasing likely risk.

3. The existing standards cannot guarantee the safe, healthy development of the next generation.

The viewpoint of the Mobile Manufacturers Forum (MMF) - an international association of radio communications equipment manufacturers – differs from that of ourselves and is as follows “*the MMF believes that there is a strong scientific basis for all consumers to have confidence in the safety of mobile phones and base stations. In addition, we fully support parents deciding for themselves whether they want their children to use a mobile phone or not.*” (MMF 2008). We make no comment on this large variation in viewpoint from that of our own researchers and ask you to come to your own conclusions!

It is necessary:

1. To accumulate suitable knowledge for preparing proper precautionary standards based on the best available scientific evidence. To carry out appropriate research, for example, to study the possible effects of repeated RF-EMF exposures from mobile phone use over periods of several years on the brains of child, teenage and adult users from the age of seven onwards.

2. To develop and undertake new long-term standardization measures, including measures related directly to suitable exposure levels for children. To put forward more rigid requirements for industries using technologies operating over such frequency ranges.

3. To actively introduce the precautionary principle. The thesis held by some that the present forms of mobile communication are absolutely safe is both premature and potentially dangerous. It is necessary to educate scientists, politicians, industries and the general public, including parents and children, that mobile communication devices are not toys, and should be used carefully in a responsible manner.

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Open Letter to Parents, Teachers, School Boards. Regarding Wi-Fi Networks in Schools

I am a scientist who does research on the health effects of electromagnetic radiation and I am becoming increasingly concerned that a growing number of schools are installing WiFi networks and are making their school grounds available for cell phone antennas.

You will be told by both the federal government (Federal Communication Commission in the US; Health Canada and Industry Canada in Canada) as well as by the Wi-Fi provider that this technology is **safe** provided that exposures to radio frequency radiation remain below federal guidelines.

This information is **outdated** and **incorrect** based on the growing number of scientific publications that are reporting adverse health and biological effects below our "short-term, thermal-based" guidelines (see www.bioinitiative.org) and the growing number of scientific and medical organizations that are asking for stricter guidelines to be enforced.

For these reasons it is irresponsible to introduce Wi-Fi microwave radiation into a school environment where young children spend hours each day.

FACT:

1. **GUIDELINES: Guidelines for microwave radiation (which is what is used in Wi-Fi) range 5 orders of magnitude in countries around the world.** The lowest guidelines are in Salzburg Austria and now in Liechtenstein. The guideline in these countries is 0.1 microW/cm². See short video (<http://videos.next-up.org/SfTv/Liechtenstein/AdoptsTheStandardOf06VmBioInitiative/09112008.html>). In Switzerland the guideline is 1 and in both Canada and the US it is 1000 microW/cm²!

Why do Canada and the US have guidelines that are so much higher than other countries? Our guidelines are based on a short-term (6-minute in Canada and 30-minute in US) heating effect. It is assumed that if this radiation does not heat your tissue it is "safe". This is NOT correct. Effects are documented at intensities well below those that are able to heat body tissue. See attached report: *Analysis of Health and Environmental Effects of Proposed San Francisco Earthlink Wi-Fi Network* (2007). These biological effects include increased permeability of the blood brain barrier, increased calcium flux, increase in cancer and DNA breaks, induced stress proteins, and nerve damage. Exposure to this energy is associated with altered white blood cells in school children; childhood leukemia; impaired motor function, reaction time, and memory; headaches, dizziness, fatigue, weakness, and insomnia.

2. **ELECTRO-HYPER-SENSITIVITY:** A growing population is adversely affected by these electromagnetic frequencies. The illness is referred to as "electro-hyper-sensitivity" (EHS) and is recognized as a disability in Sweden. The World Health Organization defines EHS as:

"... a phenomenon where individuals experience adverse health effects while using or being in the vicinity of devices emanating electric, magnetic, or electromagnetic fields (EMFs). . . EHS is a real and sometimes a debilitating problem for the affected persons, while the level of EMF in their neighborhood is no greater than is encountered in normal living environments. Their exposures are generally several orders of magnitude under the limits in internationally accepted standards."

Health Canada acknowledges in their Safety Code 6 guideline that some people are more sensitive to this form of

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energy but they have yet to address this by revising their guidelines.

Symptoms of EHS include sleep disturbance, fatigue, pain, nausea, skin disorders, problems with eyes and ears (tinnitus), dizziness, etc. It is estimated that 3% of the population are severely affected and another 35% have moderate symptoms. Prolonged exposure may be related to sensitivity and for this reason it is imperative that children's exposure to microwave radiation (Wi-Fi and mobile phones) be minimized as much as possible.

3. **CHILDREN'S SENSITIVITY:** Children are more sensitive to environmental contaminants and that includes microwave radiation. The Stewart Report (2000) recommended that children not use cell phones except for emergencies. The cell phone exposes your head to microwave radiation. A wireless computer (Wi-Fi) exposes your entire upper body and if you have the computer on your lap it exposes your reproductive organs as well. Certainly this is not desirable, especially for younger children and teenagers. For this reason we need to discourage the use of wireless technology by children, especially in elementary schools. That does not mean that students cannot go on the Internet. It simply means that access to the Internet needs to be through wires rather than through the air (wireless, Wi-Fi).
4. **REMOVAL OF WI-FI:** Most people do not want to live near either cell phone antennas or Wi-Fi antennas because of health concerns. Yet when Wi-Fi (wireless routers) are used inside buildings it is similar to the antenna being inside the building rather than outside and is potentially much worse with respect to exposure since you are closer to the source of emission.

Libraries in France are removing Wi-Fi because of concern from both the scientific community and their employees and patrons.

The Vancouver School Board (VSB) passed a resolution in January 2005 that prohibits construction of cellular antennas within 1000 feet (305 m) from school property.

Palm Beach, Florida, Los Angeles, California, and New Zealand have all prohibited cell phone base stations and antennas near schools due to safety concerns. The decision not to place cell antennas near schools is based on the likelihood that children are more susceptible to this form of radiation. **Clearly if we do not want antennas "near" schools, we certainly do not want antennas "inside" schools!** The safest route is to have wired internet access rather than wireless. While this is the more costly alternative in the short-term it is the least costly alternative in the long run if we factor in the cost of ill health of both teachers and students.

5. **ADVISORIES:** Advisories to limit cell phone use have been issued by the various countries and organizations including the UK (2000), Germany (2007), France, Russia, India, Belgium (2008) as well as the Toronto Board of Health (July 2008) and the Pittsburgh Cancer Institute (July 2008). While these advisories relate to cell phone use, they apply to Wi-Fi exposure as well since both use microwave radiation. If anything, Wi-Fi computers expose more of the body to this radiation than do cell phones.
6. **PRECAUTIONARY PRINCIPLE:** Even those who do not "accept" the science showing adverse biological effects of microwave exposure should recognize the need to be careful with the health of children. For this reason we have the Precautionary Principle, which states:

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capability. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation.

In this case "States" refers to the School Board and those who make decisions about the health of children.

The two most important environments in a child's life are the home (especially the bedroom) and the school. For this reason it is imperative that these environments remain as safe as possible. **If we are to err, please let us err on the side of caution.**

Respectfully submitted,
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